

GLASGOW CORPORATION.

---

ANNUAL REPORT

OF THE

MEDICAL OFFICER OF HEALTH

OF THE

CITY OF GLASGOW.

---

1898.

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## PREFACE.

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The circumstances under which the Report for the year 1898 has been prepared are reflected in its pages. In the main it is a record of observation dealing chiefly with the prevalence of disease throughout the year, and brought together in such order that rapid comparison with previous years may be possible, but not pursued to any extent as a critical study of details. The method adopted has been to compare the death-rate during 1898 of the particular disease under review with the average rate obtaining during the earlier years of the decade, and then to follow the comparison into the several sanitary divisions of the city. But from this general plan a departure has been necessary in one or two instances, notably in connection with enteric fever and the diarrhoeal diseases, because these have shown an increased prevalence in certain districts of the city during several years of the present decade.

In common with the experience of the country generally, the death-rate of Glasgow has been falling over a considerable period of years, and the lowest yearly rates of any since registration began have been recorded during the present decade. The death-rate for 1898 is below the average for the years 1891-7, although 1894 and 1896 had still lower rates. Stated numerically, this reduction in the rate for 1898 indicates that over 1,100 persons remained alive at the end of the year who would have succumbed during it had the rates which prevailed during 1891-7 still held good. While this affords ground for satisfaction, it is of more importance at the present moment to observe that, in the two diseases already named, some ground has been lost, and that this loss amounted to 83 deaths in excess from enteric fever and 113 from diseases of the diarrhoeal class when 1898 is compared with the earlier years of the decade. Nor is this retrogression of the death-rate for these two classes of disease confined to the year under review.

It was observed during the autumn months that enteric fever prevailed to a greater extent than was usual at that season, and that the mass of the cases had no traceable association with each other, such as is present when frankly epidemic causes are at work. Somewhat exceptional climatic conditions, it is true, prevailed during these months, and while there is reason for believing that these are factors in the evolution of the causes of disease, in that they afford the heat and moisture necessary for organic life, still they are uncontrollable factors, and only become active as disease-producing agencies when local conditions otherwise are suitable. What these suitable conditions are we shall see later.

Meanwhile attention may be directed to the years in which the increase has taken place, and to its association with an increase in the class of diarrhoeal diseases. For this purpose an examination of the district incidence of both diseases during several years has been instituted, and this enquiry has shown that, in twelve districts of the city as existing prior to the extension of the boundaries in 1891, the death-rate from enteric fever was greater during 1891-7 than in the decade 1881-90, and that in six of these twelve it was still higher in 1898. It has also shown that, in all but three of the districts within the old boundary, the death-rate from diarrhoeal diseases was greater in 1891-7 than 1881-90; and when the age incidence of the diarrhoeal deaths was enquired into, the increase was seen to be contributed almost wholly by the deaths of children under five years. The association of an increased prevalence of enteric fever and of diarrhoeal diseases among children is suggestive, and will require the most

careful observation. Although it seems probable from such figures as are meanwhile obtainable that an increased prevalence in these diseases has also been experienced elsewhere, and, in particular, that the diarrhoeal rate of seven of the large towns in Scotland was greater in 1898 than in 1891-7, while the enteric fever rate was increased chiefly in the towns of the West of Scotland, this would only suggest that widely spread meteorological forces have been in operation influencing the local conditions on which these diseases primarily depend. Frequently repeated observation has shown that where local uncleanness exists—where the surface in the neighbourhood of dwellings is grossly fouled and the air polluted—infantile diarrhoea tends to become constant; and the conditions which tend to produce the chronic prevalence of diarrhoea foster the continuance of enteric fever.

The increase in the diarrhoeal rate, extending, as it does, over a period of eight years, distinctly suggests, if, indeed, it is not to be regarded as evidence, that impurity of this character is escaping observation, and some recent inquiry indicates that in two directions at least concerted action is required.

It will be remembered that during the present decade there has been an extensive substitution of water-closets, to be used in common by several tenants, for foul-smelling, wet ashpits, and no question need be raised as to the wisdom of this policy or the hygienic value of the substitution when properly used. But the experience of several years now tends to show that the misuse of these conveniences leads not infrequently to a fouling of stairs and landings and the choking of drains, which can only be combated by frequent inspection and a rigorous application of bye-laws. The extensive demands, however, now made on the time of the Nuisance Inspectors in connection with the smoke-testing of drains necessarily curtails their opportunities for the discovery of the more obvious nuisances; and there is also some reason for thinking that the altered manner of cleansing back courts, which frequently follows the introduction of water-closets, does not maintain in all cases the standard of cleanliness which followed effective hosing. These are subjects to which the attention of the Committee on Cleansing and of the Health Committee is most earnestly directed.

A. K. CHALMERS, M.D.,

*Medical Officer of Health.*

SANITARY CHAMBERS,  
GLASGOW, *June*, 1899.



## POPULATION.

The Registrar-General estimated the population of Glasgow at the middle of the year 1898 to be 724,349, which is equal to an increase of 10·1 per cent. on the census population of 1891. This estimate is based on the assumption that the rate of increase ascertained to exist during the preceding intercensal period (1881-91) continues during the present decade. But if the inhabited houses are taken as the basis of the estimate, it will then be found to exceed the Registrar-General's by 7,326, making the population **731,675** at the middle of the year, which represents an increase of 11·2 per cent. on the census population of 1891. The effect of this difference on the calculated death-rate at all ages is inconsiderable, amounting only to less than 1 per cent. in the rate for the present year, but the absence of definite information regarding the proportion of the population living at given ages, and especially at ages under 5, exposes any enquiry into the death-rates of these ages during intercensal periods to an unknown element of error. We know, for example, that children under 5 in Glasgow had a death-rate during 1881-91 of 86 per 1,000 living, and we also know that, owing to a falling birth-rate, the number of children living at these ages fell during these years from **136** to **128** in every 1,000 living at all ages, while during the decade 1871-81 a slight increase had occurred. But in both decades there was an increase in the population *living at all ages* at rates varying from 4 per cent. in the earlier to 10·6 per cent. in the later decade. Again we have an increasing population at all ages, but the proportion of children in that population can only at present be surmised, and for definite information we must wait till next census. London in 1896 found it necessary to obtain a modified census, and it is to be hoped that the benefit of this will be extended to all large cities during the ensuing decade. The population at all ages, as estimated for each year of the present decade, is given in the following table :—

TABLE I.

GLASGOW. — POPULATION OF THE CITY AT THE CENSUS OF 1891, AND AS ESTIMATED TO THE MIDDLE OF EACH YEAR FROM 1892 BY THE REGISTRAR-GENERAL AND BY THE MEDICAL OFFICER OF HEALTH.

Year.	Registrar-General's Estimate based on rate of increase between 1881-1891.			Estimate based on number of inhabited houses as per return supplied by City Assessor.		
	Old Glasgow,	...	...	...	...	565,710
1891	Census Population.					
	Greater Glasgow,	...	...	...	...	658,198
1892 ...	...	...	669,059	...	...	667,531
1893 ...	...	...	677,883	...	...	674,300
1894 ...	...	...	686,820	...	...	684,148
1895 ...	...	...	695,876	...	...	693,084
1896 ...	...	...	705,052	...	...	703,350
1897 ...	...	...	714,919	...	...	715,579
1898 ...	...	...	724,349	...	...	<b>731,675</b>
Increase 1891 to 1898,						
Number,	...	66,151	...	...	...	73,477
Percentage,	...	10·1	...	...	...	11·2

NATURAL INCREASE BY EXCESS OF BIRTHS OVER DEATHS BETWEEN 1892 AND  
1898 COMPARED WITH ESTIMATED INCREASE.

Births registered from Middle of 1892		
to middle of 1898, ...	...	139,961
Deaths registered in same period.	...	91,003
Increase, ...	...	48,958, or 7·3 per cent.
Estimated increase, 1892-98—		
Registrar-General's estimate,	...	55,290, or 8·3 per cent.
Medical Officer's estimate,	...	64,144, or 9·6 per cent.

NATURAL INCREASE.—IMMIGRATION.

Both these factors contribute to the increase of a population, and in the foregoing table their effect is compared. Natural increase arises from excess of births over deaths. The necessary figures for the districts added in 1891 are not available for ten months of that year, but in the years 1892-1898 the births exceeded the deaths by 48,958, which represents a natural increase of 7·3 per cent. on the 1892 population. This leaves 1 per cent. of the total increase during these years as estimated by the Registrar-General's method, but of 2·3 per cent. according to the Medical Officer's, to be accounted for by excess of immigration over emigration. In actual numbers this represents a variation of 8,824 in the estimates, 6,332 being added to the population by immigration according to the Registrar-General's method, but 15,156 according to the Medical Officer's, in the years 1892-98.

INCREASE OR DECREASE OF POPULATION IN EACH SANITARY  
DISTRICT OF THE CITY IN 1891-8.

Of the 24 districts of the city as existing prior to the 1891 extension, 13 show a decrease in population in 1898—varying from 1 per cent. in Blythswood to 17·7 per cent. in St. Enoch Square district. The increase in the remaining 11 divisions of Old Glasgow varies from 1·4 per cent. in Barrowfield to 17·8 per cent. in Woodside. On the other hand, all the added districts have increased at rates varying from 11·3 and 11·8 per cent. in Hillhead and Kelvinside, to 58·8 per cent. in Pollokshields, W., and Bellahouston, and 79·9 per cent. in Maryhill.

DENSITY OF POPULATION.—PERSONS PER ACRE.

For the city this has increased from 55·5 persons per acre in 1891 (extended city) to 59·4 in 1898, and varies from four persons per acre in Pollokshields, W., and Bellahouston, to 338 in Brownfield, which, however, is a decrease compared with 1891. In the following Table II. the particulars for each district are given :—

TABLE II.

**Glasgow.**—ACREAGE, INHABITED HOUSES, ESTIMATED POPULATION, AND PERSONS PER ACRE IN EACH SANITARY DISTRICT IN 1898; ALSO THE POPULATION AND PERSONS PER ACRE AT THE CENSUS OF 1891, SHOWING THE PERCENTAGE INCREASE OR DECREASE IN THE POPULATION DURING THE INTERVENING PERIOD.

SANITARY DISTRICT.	Acreage, 1898.	Inhabited Houses, 1898.	POPULATION.						Persons per Acre, including Institutions and Shipping.	
			Actual, Census 1891.	Estimated, middle of 1898.	Decrease.	Increase.	Decrease per Cent.	Increase per Cent.	1891.	1898.
— Blythswood, ... ..	266	5,608	28,438	28,400	38	...	0.1	...	107	107
1. Exchange, ... ..	215	4,400	19,983	21,661	...	1,678	...	8.4	101	110
2. Port-Dundas, ... ..	73	949	4,655	4,459	196	...	4.2	...	64	61
3. High Street and Closes, W., ...	42	2,081	9,223	10,136	...	913	..	9.9	223	242
4. St. Rollox, ... ..	45	3,493	15,751	16,545	...	794	...	5.0	350	368
5. Bellgrove and Dennistoun, ...	1,152	15,493	62,208	72,592	...	10,384	...	16.7	55	64
6. High Street and Closes, E., ...	50	1,180	5,635	5,441	194	...	3.4	...	150	144
7. Greenhead and London Road, ...	897	13,129	51,787	59,380	...	7,593	...	14.7	62	68
8. Barrowfield, ... ..	123	6,412	26,944	27,318	...	374	...	1.4	219	222
9. Monteith Row, ... ..	115	878	4,643	4,294	349	...	7.5	...	40	37
10. St. Andrew's Square, ... ..	22	775	4,124	3,871	253	...	6.1	...	201	201
11. Calton, ... ..	66	4,878	21,747	20,965	782	...	3.6	...	343	334
12. St. Enoch Square, ... ..	84	530	3,429	2,822	607	...	17.7	...	41	40
13. Brownfield, ... ..	11	697	3,451	3,408	43	...	1.2	...	345	338
14. Bridgegate and Wynds, ...	35	968	5,689	4,891	798	...	14.0	...	163	140
15. Woodside, ... ..	336	14,866	58,257	68,629	...	10,372	...	17.8	174	205
16. Cowcaddens, ... ..	61	3,792	16,235	16,627	...	392	...	2.4	266	280
17. Kelvinhaugh and Sandyford, ...	626	6,404	29,538	31,073	...	1,535	...	5.2	49	51
18. Anderston, ... ..	127	6,084	29,251	28,446	805	...	2.8	...	234	226
19. Kingston, ... ..	389	8,379	40,863	39,797	1,066	...	2.6	...	106	103
20. Laurieston, ... ..	49	1,856	8,850	8,725	125	...	1.4	...	186	180
21. Hutcheson Square, ... ..	453	15,336	63,493	69,231	...	5,738	...	9.0	140	153
22. Gorbals, ... ..	48	2,367	13,199	11,317	1,882	...	14.3	...	282	253
— Springburn and Rockvillia, ...	866	6,721	28,278	32,892	...	4,614	...	16.3	33	38
23. Govanhill, ... ..	315	4,445	17,014	20,934	...	3,920	...	23.0	54	66
24. Crosshill, ... ..	334	1,383	4,320	6,768	...	2,448	...	56.7	13	20
25. Langside and Mount Florida, ...	420	2,699	9,141	13,317	...	4,176	...	45.7	22	33
26. Pollokshields, E., and Strathbungo,	243	2,785	9,869	13,581	...	3,712	...	37.6	41	56
27. Pollokshields, W., and Bellahouston,	1,278	921	3,538	5,620	...	2,082	...	58.8	4	4
28. Hillhead, ... ..	130	1,829	7,738	8,609	...	871	...	11.3	60	66
29. Kelvinside, ... ..	765	1,074	5,526	6,180	...	654	...	11.8	8	9
30. Maryhill, ... ..	1,183	6,103	16,798	30,235	...	13,437	...	79.9	15	27
31. Possilpark and Barnhill, ...	1,492	3,658	14,908	18,010	...	3,102	...	20.8	11	13
— Institutions and Harbour, ...	...	...	13,550	15,501	...	1,951	...	...	...	...
CITY, ... ..	12,311	152,173	658,073	731,675	...	73,602	...	11.2	55.5	59.4

<sup>1</sup> The Acreage here was increased in 1897 by the addition of Bellahouston Park and District.

## MARRIAGES.

The number of marriages registered within the City of Glasgow during 1898 was 7,108, which is equal to a rate of 9·81 per 1,000 living.

In comparing this rate with those of other cities, it should be noted that the rate here given must be doubled to express the proportion of PERSONS who entered the married state. In the following table it will be observed that the rate for 1898 is higher than in any year since 1883, and that the average rate for the three years 1896-98, has not been reached in any similar period since the decade 1871-80.

TABLE III.

GLASGOW.—MARRIAGE-RATE PER 100,000 LIVING FROM 1870.

1870, 980	1881, 932	1891, 924
1871, 940	1882, 964	1892, 914
1872, 1,035	1883, 996	1893, 867
1873, 992	1884, 935	1894, 885
1874, 1,002	1885, 856	1895, 885
1875, 993	1886, 830	1896, 968
1876, 986	1887, 829	1897, 966
1877, 979	1888, 882	1898, 981
1878, 866	1889, 914	
1879, 822	1890, 965	
1880, 850		

## BIRTHS.

The number of births registered during the year was 24,258, which is equal to a rate of 33·154 per 1,000 living, as compared with 33·808 for the years 1891-97.

For the following periods the birth-rate for the city was as follows :—

Five years (1886-90)=35·5 per 1,000.

Do. (1891-95)=33·9 „

1896, ... =34·1 „

1897, ... =33·4 „

1898, ... =33·2 „

} Average rate, 33·6 per 1,000.

In the following table the birth-rate for each of the districts in 1898 is compared with the average rate for the years 1891-97. Kelvinside had the lowest birth-rate in 1898, viz., 10·841 per 1,000 living, and Bridgegate and Wynds the highest, 46·003 per 1,000 living.

TABLE IV.

Glasgow.—BIRTH-RATE PER MILLION IN EACH SANITARY DISTRICT (EXCLUSIVE OF INSTITUTIONS AND HARBOUR) FOR 7 YEARS, 1891-97, AND FOR 1898.

	SANITARY DISTRICT.	Birth-rate per Million.	
		1891-97.	1898.
— Blythswood, ... ..		20,776	19,014
1. Exchange, ... ..		29,843	29,546
2. Port-Dundas, ... ..		38,059	36,331
3. High Street and Closes, West, ... ..		32,898	36,109
4. St. Rollox, ... ..		36,863	32,880
5. Bellgrove and Dennistoun, ... ..		36,279	35,500
6. High Street and Closes, East, ... ..		38,799	38,044
7. Greenhead and London Road, ... ..		<b>40,168</b>	<b>41,950</b>
8. Barrowfield, ... ..		38,803	38,363
9. Monteith Row, ... ..		24,551	23,288
10. St. Andrew's Square, ... ..		31,926	34,358
11. Calton, ... ..		38,520	37,491
12. St. Enoch Square, ... ..		30,695	31,538
13. Brownfield, ... ..		<b>40,644</b>	<b>43,427</b>
14. Bridgegate and Wynds, ... ..		36,391	<b>46,003</b>
15. Woodside, ... ..		33,481	33,659
16. Cowcaddens, ... ..		<b>43,962</b>	<b>45,468</b>
17. Kelvinhaugh and Sandyford, ... ..		25,542	24,137
18. Anderston, ... ..		38,608	36,279
19. Kingston, ... ..		29,915	28,997
20. Laurieston, ... ..		37,659	39,542
21. Hutcheson Square, ... ..		39,988	37,772
22. Gorbals, ... ..		38,794	<b>41,707</b>
— Springburn and Rockvilla, ... ..		39,819	38,793
23. Govanhill, ... ..		33,063	33,677
24. Crosshill, ... ..		15,012	13,741
25. Langside and Mount Florida, ... ..		23,700	22,753
26. Pollokshields, East, and Strathbungo, ... ..		17,524	17,966
27. Pollokshields, West, and Bellahouston, ... ..		12,526	13,167
28. Hillhead, ... ..		13,831	12,080
29. Kelvinside, ... ..		14,319	10,841
30. Maryhill, ... ..		39,010	36,844
31. Possilpark and Barnhill, ... ..		<b>40,378</b>	<b>41,477</b>
— Institutions, ... ..		—	—
CITY, ... ..		33,808	33,154

Six of the above districts had a birth-rate exceeding 40 per 1,000 living in 1898, and in 4 of these, viz., 7, 13, 16, and 31, the average rate also exceeded 40 per 1,000 in the years 1891-7.

#### DEATHS.—ALL CAUSES.

15,333 deaths from all causes were registered as occurring within the city during 1898, and on the Registrar-General's estimate of the population this is equal to a death-rate of 21·2 per 1,000. But there falls to be deducted from these deaths 461, which is the balance remaining after adding the deaths of citizens occurring in institutions beyond the city boundary (viz., 99 deaths in Govan Poorhouse and Knightswood Hospital), and deducting deaths in Glasgow institutions (560) of persons residing beyond the city boundary. There thus remain 14,872 deaths of citizens which, on the Registrar-General's estimate of the population, is equal to a death-rate of 20·5 and on the Medical Officer's of 20·3 per 1,000 living, a difference, as already stated, of less than 1 per cent. As the latter rate is based on the deaths of citizens, and on the population estimated to inhabit the occupied houses, it may be regarded as most nearly representing the actual death-rate of the city for the year.

But, in order to obtain a strictly comparable series of death-rates for the city extending over a period of years, we may take the deaths uncorrected for institutions, and the population as estimated by the Registrar-General, and on these lines the following table is a continuation of the corresponding column in Table V. of Dr. Russell's Monograph on the Evolution of Sanitation in Glasgow (1895):—<sup>1</sup>

GLASGOW.—ALL CAUSES—DEATH-RATES PER 1,000 LIVING.

Five years (1886-90)=	23·2	
" (1891-95)=	22·9	
1896, ...	=20·4	Average 21·3
1897, ...	=22·2	
1898, ...	=21·2	

During the present decade the lowest annual death-rates of any since registration began have been recorded; the rate for 1898 is lower than that for 1897, but in 1896 it was 20·4, and in 1894, 19·9.

In order to obtain a rapid view of the changes which have taken place in the death-rates from several causes during the years of the present decade, the following table has been constructed—the deaths being corrected for institutions and the population taken being the Medical Officer's estimate:—

TABLE V.

Glasgow.—DEATH-RATES PER Million (ALL AGES) FOR SEVEN YEARS, 1891-97, AND FOR 1898.

CAUSES OF DEATH.	7 Years, 1891-97.	1898.	Gain.	Loss.
ZYMOTICS, ... ..	... 3,460	... 3,448		
Typhus, ... ..	18	8	10	...
Enteric Fever, ... ..	199	312	...	113
Undefined Fever, ... ..	3	5	...	2
Smallpox, ... ..	13	0	13	...
Scarlet Fever, ... ..	305	260	45	...
Measles, ... ..	824	737	87	...
Whooping-cough, ... ..	926	961	...	35
Croup, ... ..	123	72	161	...
Diphtheria, ... ..	264	154		
Diarrhoeal Diseases, ... ..	785	939	...	154
PULMONARY DISEASES, ... ..	... 7,118	... 5,984		
Phthisis, ... ..	2,087	1,811	276	...
Acute Diseases of Lungs (Pneumonia, Bronchitis, Pleurisy),	5,031	4,173	858	...
DISEASES OF CHILDHOOD, ... ..	... 2,893	... 2,856		
Nervous Diseases of Children, ... ..	1,307	1,253	54	...
Atrophy and Debility, ... ..	1,023	1,004	19	...
Premature Birth, ... ..	563	599	...	36
ALL OTHER CAUSES, ... ..	... 8,435	... 8,038	397	...
ALL CAUSES, ... ..	... 21,906	... 20,326	1,920	340

<sup>1</sup> A continuation of this table forms No. 1 of the Appendix.



This table may be read as follows:—the difference between the death-rates in both periods is stated as a gain or loss, resulting from the rate for 1898, in the several causes specified, having been either reduced or increased when compared with the average annual rate for the years 1891-7. From the several causes under which gains are recorded 1,920 fewer deaths occurred per million in 1898 than would have taken place had the rates of the previous years been maintained, but from this number 340 must be deducted as resulting from diseases which had an increased death-rate in 1898. This leaves a balance of 1,580 lives gained per million, and represents, on the estimated population of 1898, an actual saving of 1,154 lives over all causes.

The most notable source of gain in 1898 is presented by the reduced death-rate from pulmonary diseases. 1,134 of the 1,580 lives saved per million are from these causes alone, while 858 of this number arise from a reduction in the rates for acute diseases of the lungs (pneumonia, pleurisy, and bronchitis). It will be remembered that several of the years in the period 1891-7 were characterised by influenza prevalences, and the reduction in the deaths from the acute diseases of lungs in 1898 is largely an indication of the relatively less fatal prevalence of this disease in that year. But the rate for pulmonary phthisis alone indicates a reduction of 276 per million on the average rate for the years 1891-97, and, as this reduction is but one further stage in an almost unbroken series extending now over several years, it affords not only an illustration of the value of the methods already in operation for dealing with this disease, but a very distinct indication of the lines on which further action for its continued reduction should proceed. On the debit side of the account there is a very considerable increase in the fatal prevalence of enteric fever and the diarrhoeal diseases.

#### DISTRICT DEATH-RATES.—ALL CAUSES.

For comparative purposes the death-rates of the several sanitary districts are given in the following table for 1881-90, 1891-7, and 1898. (*See Table VI., page 16.*)

It will be observed that, while the rate for the whole city shows a continuous decrease, and in three<sup>1</sup> districts only was the death-rate from *All Causes* higher in 1898 than during the period 1891-7, when this latter period is compared with 1881-90, an increase in the death-rate is shown to have occurred in nine<sup>2</sup> districts. Port-Dundas alone presents an increase for 1891-7, and again in 1898.

In further examining the details of the death-rates in these districts, it will be convenient to deal in the first place with those which show an increase in the 1891-7 period, and while the following table reproduces for further reference the rates for each of the several causes of death which have been extracted, attention should be specially directed to those columns giving the rates for enteric fever and diarrhoea, because of the increase which we have already seen to have occurred in these diseases when considering the death-rate of the city as a whole. (*See Table VII., page 17.*)

In each of these districts diarrhoeal diseases were more fatal in 1891-7. Six of them had also an increase in the enteric fever mortality, and seven an increase in the infantile mortality. In the following table corresponding details are given of the death-rates in those districts presenting an increase in 1898 compared with 1891-7. (*See Table VIII., page 18.*)

<sup>1</sup> Exchange, Port-Dundas, and Govanhill.

<sup>2</sup> Blythswood, Port-Dundas, High Street and Closes, W., Monteith Row, St. Andrew's Square, St. Fnoch Square, Brownfield, Cowcaddens, and Gorbals.

TABLE VI.

GLASGOW.—DEATH-RATES PER THOUSAND FROM ALL CAUSES IN EACH SANITARY DISTRICT FOR THE PERIODS 1881-90, 1891-97, AND 1898.

SANITARY DISTRICTS.	1881-90.	1891-97.	1898.
— Blythwood, ... ..	16·45	<b>16·53</b>	15·60
1. Exchange, ... ..	21·43	19·63	<b>20·64</b>
2. Port-Dundas, ... ..	26·88	<b>27·39</b>	<b>28·71</b>
3. High Street and Closes, W., ...	29·33	<b>29·97</b>	26·44
4. St. Rollox, ... ..	22·65	21·68	18·98
5. Bellgrove and Dennistoun, ...	22·19	20·83	18·85
6. High Street and Closes, E., ...	33·59	31·20	29·41
7. Greenhead and London Road, ...	24·91	23·30	21·34
8. Barrowfield, ... ..	28·98	26·69	25·04
9. Monteith Row, ... ..	20·85	<b>21·97</b>	18·86
10. St. Andrew's Square, ... ..	24·49	<b>25·61</b>	24·03
11. Calton, ... ..	30·26	29·64	26·57
12. St. Enoch Square, ... ..	24·33	<b>24·86</b>	24·45
13. Brownfield, ... ..	30·37	<b>31·33</b>	30·52
14. Bridgegate and Wynds, ... ..	39·54	35·67	31·28
15. Woodside, ... ..	19·61	17·85	17·46
16. Cowcaddens, ... ..	32·55	<b>32·77</b>	32·06
17. Kelvinhaugh and Sandyford, ...	16·23	14·87	13·48
18. Anderston, ... ..	27·88	26·12	25·98
19. Kingston, ... ..	20·79	20·51	18·14
20. Laurieston, ... ..	27·60	27·37	27·28
21. Hutcheson Square, ... ..	23·65	21·61	20·58
22. Gorbals, ... ..	28·26	<b>28·91</b>	28·01
— Springburn and Rockvilla, ...	22·12	20·89	19·64
23. Govanhill, ... ..	...	15·53	<b>16·72</b>
24. Crosshill, ... ..	...	12·28	10·64
25. Langside and Mount Florida, ...	...	11·30	10·51
26. Pollokshields, E., and Strathbungo,	...	10·27	10·16
27. Pollokshields, W., and Bellahouston,	...	8·85	8·54
28. Hillhead, ... ..	...	11·21	9·06
29. Kelvinside, ... ..	...	8·73	6·47
30. Maryhill, ... ..	...	17·15	16·54
31. Possilpark and Barnhill, ... ..	...	18·20	16·44
CITY, ... ..	<b>24·22</b>	<b>21·91</b>	<b>20·33</b>



TABLE VII.

**Glasgow.**—DEATH-RATES PER **Million** FROM CERTAIN CAUSES AND ALL CAUSES; ALSO BIRTH-RATES PER **Million** AND DEATHS UNDER 1 YEAR PER THOUSAND BORN IN THOSE SANITARY DISTRICTS IN WHICH THE DEATH-RATE FROM ALL CAUSES IN 1891-97 EXCEEDED THAT OF 1881-90.

SANITARY DISTRICT.	Period.	All Causes.	FEBRILE.			Smallpox.	Scarlet Fever.	Measles.	Hooping-cough.	Croup.	Diphtheria.	Diarrhoeal Diseases.	Consumption.	Acute Diseases of Lungs.	Nervous Diseases of Children.	Atrophy Debility of Children.	Premature Birth.	Other Causes.	Births, rate per 1,000, 000, 1 Year.	Deaths, rate under 1 Year per 1,000 Born.
			Typhus.	Enteric.	Undefined.															
— Blythswood, ...	{ 1881-90, ... { 1891-97, ...	{ 16,450 ... { 16,526 ...	20	160	10	...	350 218	300 302	520 495	120 40	230 237	270 425	1,800 1,643	3,290 3,404	980 732	540 515	370 450	7,490 7,916	22,600 20,776	121 136
2. Port-Dundas, ...	{ 1881-90, ... { 1891-97, ...	{ 26,880 ... { 27,386 ...	90	330	...	31	360 282	820 1,471	1,600 1,252	200 125	230 438	870 939	1,940 2,723	7,220 6,448	2,050 1,659	1,140 1,502	890 876	9,150 9,233	39,600 38,059	176 183
3. High Street and Cloves, W., ...	{ 1881-90, ... { 1891-97, ...	{ 29,330 ... { 29,969 ...	50	120	30	...	310 394	600 744	1,160 1,002	240 61	190 212	580 774	3,340 2,838	6,960 7,102	1,880 1,442	870 1,244	540 622	12,460 13,171	31,900 32,898	173 168
9. Monteith Row, ...	{ 1881-90, ... { 1891-97, ...	{ 20,850 ... { 21,972 ...	60	230	20	33	410 229	290 555	710 979	40 98	290 229	400 620	2,390 2,285	4,390 5,028	1,350 1,175	520 947	330 588	9,360 8,978	25,700 24,551	144 173
10. St. Andrew's Square, ...	{ 1881-90, ... { 1891-97, ...	{ 24,490 ... { 25,611 ...	80	160	...	...	570 357	650 749	850 963	280 36	360 285	630 1,035	2,790 2,675	6,490 6,956	1,340 1,498	750 927	470 749	9,080 9,096	30,800 31,926	149 173
12. St. Enoch Square, ...	{ 1881-90, ... { 1891-97, ...	{ 24,330 ... { 24,861 ...	30	150	30	45	580 269	520 269	550 1,436	130 135	370 225	400 808	3,020 2,334	4,880 6,462	1,470 1,660	790 808	640 852	10,650 9,109	29,200 30,695	151 184
13. Brownfield, ...	{ 1881-90, ... { 1891-97, ...	{ 30,370 ... { 31,326 ...	120	210	60	...	360 418	1,200 1,506	1,170 1,296	300 42	180 377	990 1,129	3,340 2,259	7,820 7,988	1,900 2,677	1,200 1,673	810 920	10,710 10,790	37,100 40,644	199 183
16. Cowcaddens, ...	{ 1881-90, ... { 1891-97, ...	{ 32,550 ... { 32,773 ...	80	160	10	20	700 339	990 1,482	1,930 1,545	340 89	330 330	1,110 1,447	3,350 2,688	8,370 8,823	2,260 2,924	1,710 2,384	980 1,045	10,220 10,028	42,800 43,982	190 215
22. Corbals, ...	{ 1881-90, ... { 1891-97, ...	{ 28,260 ... { 28,913 ...	30	340	...	...	700 323	920 980	1,230 1,335	320 129	250 194	960 1,367	2,830 2,734	8,250 8,493	1,720 1,850	980 1,195	440 700	9,290 9,300	36,800 38,794	173 183
— CITY, ...	{ 1881-90, ... { 1891-97, ...	{ 24,220 ... { 21,906 ...	40	230	20	10	490 305	680 824	1,150 926	250 123	280 264	700 785	2,680 2,087	5,620 5,031	1,650 1,307	950 1,023	610 563	8,860 8,435	36,500 33,808	147 146

TABLE VIII.

DEATH-RATES PER MILLION FROM VARIOUS CAUSES, ALSO BIRTH-RATES AND DEATHS UNDER 1 YEAR PER THOUSAND BIRTHS IN THE SANITARY DISTRICTS HAVING A HIGHER DEATH-RATE FOR ALL CAUSES IN 1898 THAN IN 1891-97.

SANITARY DISTRICTS.	Period.	All Causes.	FEBRILE.			Smallpox.	Scarlet Fever.	Measles.	Whooping-cough.	Croup and Diphtheria.	Diarrheal Diseases.	Consumption.	Acute Diseases of Lungs.	Nervous Diseases of Children.	Atrophy and Debility of Children.	Premature Birth.	Other Causes.	Birth-rate per 1,000.	Deaths under 1 year per 1,000 Born.
			Typhus.	Enteric.	Undefined.														
1. Exchange, ...	1891-97,	19,634	...	177	...	...	252	573	654	410	511	1,963	3,939	1,206	947	586	8,416	29.8	149
	1898,	20,636	...	462	...	...	92	739	415	46	692	1,662	3,555	1,431	1,246	693	9,603	29.5	175
	Increase,	1,002	...	285	...	...	...	166	...	...	181	...	...	225	299	107	1,187	...	26
2. Port-Dundas, ...	1891-97,	27,386	...	407	...	31	282	1,471	1,252	563	939	2,723	6,448	1,659	1,502	876	9,233	38.1	183
	1898,	28,706	...	224	...	...	224	449	897	673	1,570	2,915	7,401	2,018	673	1,570	10,092	36.2	223
	Increase,	1,320	...	...	...	...	...	...	...	110	631	192	953	359	...	694	859	...	39
23. Govanhill, ...	1892-97,	15,529	18	137	...	...	229	357	742	431	367	1,530	2,996	861	925	541	6,395	33.1	111
	1898,	16,719	...	286	...	...	908	955	812	334	908	1,529	2,532	1,099	573	478	6,305	33.7	143
	Increase,	1,190	...	149	...	...	679	598	70	...	541	...	...	238	...	...	...	...	...
CITY, ...	1891-97,	21,906	18	199	3	13	305	824	926	387	785	2,087	5,031	1,307	1,023	563	8,435	33.8	146
	1898,	20,326	8	312	5	...	260	737	961	226	939	1,811	4,173	1,253	1,004	599	8,038	33.2	156
	Increase,	...	...	113	...	...	...	...	35	...	154	...	...	...	...	36	...	...	10

Here, again, there is an increase in the diarrhoeal death-rate and in the infantile mortality in each, while two have also an increased rate for enteric fever. But the table is also of interest from another aspect. If the line of figures showing the excess in 1898 is examined, it will be seen that the increase in Govanhill District has almost wholly been produced by zymotic diseases. In Port-Dundas, on the other hand, diphtheria and the diarrhoeal diseases alone of the zymotics were present in excess, and the increase in its death-rate is due rather to other forms of disease which are less dependent on the accidents of infection. This district indeed requires close attention. Its death-rate from all causes has risen steadily in the three periods we are comparing. The figures read 26·8, 27·4, and 28·7 per 1,000 living. It was pointed out<sup>1</sup> on a former occasion that it alone of all the city districts had an increasing death-rate from phthisis. The rate in 1898 is still greater. There may be some unknown factor in the occupation of its inhabitants which plays an important part in this. There certainly is an excessive degree of air impurity, in the form of smoke and dust, surrounding their dwellings. Exchange District stands midway in respect of mortality between these others. Its zymotic rate, as a whole, has fallen, but for enteric fever, diarrhoea, and measles, there is an increase in 1898 compared with 1891-7.

Before leaving the subject of the district death-rates, the relationship of the six districts showing the highest death-rates in the decade 1881-90 and in 1891-7 may be noted—

#### SIX DISTRICTS WITH HIGHEST DEATH-RATE IN SEVERAL PERIODS.

			Death-rate per 1,000 Living.	Average <sup>2</sup> of Rates.
1881-90	14. Bridgegate and Wynds,	...	39·54	35·23
	6. High Street and Closes, East,	...	33·59	
	16. Cowcaddens,	... ..	32·55	
	13. Brownfield,	... ..	30·37	29·52
	3. High Street and Closes, West,	...	29·33	
	8. Barrowfield,	... ..	28·98	
1891-7	14. Bridgegate and Wynds,	...	35·67	30·25
	16. Cowcaddens,	.. ...	32·77	
	13. Brownfield,	... ..	31·33	
	6. High Street and Closes, East,	...	31·20	30·26
	3. High Street and Closes, West,	...	29·97	
	11. Calton,	... ..	29·64	
1898	16. Cowcaddens,	... ..	32·06	31·28
	14. Bridgegate and Wynds,	...	31·28	
	13. Brownfield,	... ..	30·52	
	6. High Street and Closes, East,	...	29·41	28·70
	2. Port-Dundas,	... ..	28·71	
	22. Gorbals,	... ..	28·01	

In the composition of these groups only one is changed, when 1891-7 is compared with 1881-90. Barrowfield, formerly 6th worst, is now 10th, while Calton, which in 1881-90 was 7th highest, with a death-rate of 30·26, is now 6th with a rate of 29·64. Brownfield and Cowcaddens we have already seen have an increasing death-rate, while High Street and Closes, East, is 4th, with a falling rate.

<sup>1</sup>“The Distribution of Tuberculous Diseases in Glasgow,” 1897.

<sup>2</sup>The figures in this column are averages only, and must not be read as expressing the combined death-rate of the bracketted districts.

The position now occupied by Bridgegate and Wynds is most accurately shown in the 1898 grouping, as will be evident from the following biennial rates :—

	1891-2.	1893-4.	1895-6.	1897-8.
Bridgegate and Wynds—Death-rate per				
1,000 living,     ...     ...     ...	43.68	35.55	31.33	30.97

To all who are familiar with the extensive reconstruction of this area, which has taken place chiefly during the present decade and is still in progress, the steady decrease in its death-rate will not be surprising. A healthier population now inhabits the greater part of the district. But it is not the old population nurtured into more vigorous life. The old population has been removed. Everything, indeed, is being changed but the soil, and that is being purified. If it is now showing that it is capable of maintaining a healthier life, it will be remembered that the healthier life has been implanted. In no sense is the new population descended for the old.

### INFANTILE MORTALITY.

#### DEATHS UNDER 1 YEAR OF AGE PER 1,000 BIRTHS.

The number of infants dying under 1 year of age was 3,792, which is equal to a death-rate per 1,000 births of 156. Comparing this rate over a series of years we have as follows :—

	Death-rate under 1, per 1,000 Births.
Five years (1886-90),     ...     ...	143
„     (1891-95),     ...     ...	146
1896,     ...     ...     ...     ...	136
1897,     ...     ...     ...     ...	160
1898,     ...     ...     ...     ...	156

In the following table the infantile mortality is stated for several large towns in Scotland and England :—\*

	10 years 1888-97.	1898.
Glasgow,     ...     ...     ...	146	156
Edinburgh,     ...     ...     ...	140	144
Dundee,     ...     ...     ...	176	182
Aberdeen,     ...     ...     ...	141	158
Liverpool,     ...     ...     ...	189	184
Manchester,     ...     ...     ...	185	197
Birmingham,     ...     ...     ...	180	191
Leeds,     ...     ...     ...	178	182
Sheffield,     ...     ...     ...	180	195

\* The figures for the Scotch Towns are compiled from the Registrar-General's Annual Reports ; those for the English Towns are from the Annual Summary for 1898.

With the exception of Edinburgh, the infantile mortality in Glasgow was lower in 1898 than in any of the other larger towns quoted, and only Edinburgh and Aberdeen have a lower rate in the 10 years ending 1897. In all these towns Liverpool alone had a lower rate in 1898 than the average of the 10 years ending 1897.

### DISTRICT INFANTILE MORTALITY.

The infant mortality in the several sanitary districts varied as follows, the districts being arranged in an ascending scale of average annual rates for the years 1891-97 :—

TABLE IX.

GLASGOW.—DEATHS UNDER 1 YEAR PER 1,000 BIRTHS IN EACH SANITARY DISTRICT.

SANITARY DISTRICTS.	Seven Years, 1891-7.	1898.
28. Hillhead, ... ..	57	96
27. Pollokshields (W.) and Bellahouston, ... ..	66	108
26. Pollokshields and Strathbungo, ... ..	71	89
25. Langside and Mount Florida, ... ..	73	92
29. Kelvinside, ... ..	76	90
24. Crosshill, ... ..	80	86
17. Kelvinhaugh and Sandyford, ... ..	105	116
23. Govanhill, ... ..	111	143
30. Maryhill, ... ..	119	146
31. Possilpark and Barnhill, ... ..	125	127
15. Woodside, ... ..	125	138
— Blythwood, ... ..	136	144
— Springburn and Rockvilla, ... ..	137	155
5. Bellgrove and Dennistoun, ... ..	138	<b>137</b>
21. Hutcheson Square, ... ..	140	158
4. St. Rollox, ... ..	144	145
19. Kingston, ... ..	145	<b>136</b>
1. Exchange, ... ..	149	<b>144</b>
7. Greenhead and London Road, ... ..	150	151
8. Barrowfield, ... ..	166	188
18. Anderston, ... ..	166	200
20. Laurieston, ... ..	166	183
3. High Street and Closes, W., ... ..	168	<b>158</b>
9. Monteith Row, ... ..	173	190
10. St. Andrew's Square, ... ..	173	<b>150</b>
11. Calton, .. ...	178	190
2. Port Dundas, ... ..	183	222
13. Brownfield, ... ..	183	<b>148</b>
22. Gorbals, ... ..	183	199
12. St. Enoch Square, ... ..	184	202
6. High Street and Closes, E., ... ..	193	<b>188</b>
16. Cowcaddens, ... ..	215	<b>214</b>
14. Bridgegate and Wynds, ... ..	232	<b>227</b>
CITY, ... ..	146	156

It will be observed that nine only of the districts have a lower infantile mortality in 1898 than the average for 1891-7.

## CERTIFICATION OF CAUSES OF DEATH AND INSURANCE OF LIVES IN FRIENDLY SOCIETIES.

For the purpose of future reference tables, Nos. 7-13 in the Appendix, are given which contain information for the year 1898, and also for the seven years 1891-1897.

### INFECTIOUS DISEASES.

18,957 cases of infectious disease were registered during 1898.<sup>1</sup>

### PRINCIPAL ZYMOTIC DISEASE.

The adjusted number of deaths from the principal zymotic diseases, viz., small-pox, measles, scarlet fever, diphtheria (including membranous croup), croup, whooping-cough, typhus, enteric, and undefined fevers, and diarrhoea, was 2,523, giving an annual death-rate of 3·448 per 1,000 living. For several years these rates are as follows :—

#### GLASGOW.—DEATH-RATE FROM PRINCIPAL ZYMOTIC DISEASES IN SEVERAL PERIODS.

1881-90, ... ..	3·850 per 1,000 living.
1891-7, ... ..	3·460       "
1898, ... ..	3·448       "

The rates here given are based on a strictly uniform system of classification,<sup>2</sup> but in order to compare the rates in Glasgow with those of other cities, the classification of the Registrar-General must be adopted as is done in the following table :—

TABLE X.

#### PRINCIPAL ZYMOTIC DISEASES.<sup>3</sup>

	Death-rate per 100,000. 1888-97.	Death-rate per 100,000. 1898.
Glasgow, ... ..	323	304
Edinburgh, ... ..	217	189
Dundee, .. ...	227	270
Aberdeen, ... ..	202	183
Liverpool, ... ..	347	322
Manchester, ... ..	340	311
Birmingham, ... ..	282	278
Leeds, ... ..	263	312
Sheffield, ... ..	316	382
London, ... ..	272	278

The rates for Glasgow are considerably greater than those for the other large towns in Scotland, but they compare favourably with the large English towns. London is the only exception.

### SMALLPOX.

No cases of smallpox occurred during the year, but, among the Lascar crew of an Indian trading steamer in the harbour, there occurred 16 cases of a disease quite foreign to the nosology of this country, and presenting many features which resembled smallpox in some and chickenpox in others. Finally, its true character

<sup>1</sup> See Appendix, Table V.

<sup>2</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

<sup>3</sup> The figures for the Scotch towns are from the Registrar-General's Annual Reports; those for the English towns from the Registrar-General's Annual Summary for 1898.



was established, and a description of the outbreak was made the subject of a contribution to the pages of the *Lancet*, by Drs. Thomson and Brownlie.<sup>1</sup>

#### VACCINATION DEPARTMENT.

The following is a summary of the vaccinations done by the officers of this department during 1898:—

						Primary.	Revaccinations.
At office,	...	...	...	...	...	462	270
In prisons,	...	...	...	...	...	14	2,835
						<hr/> 476 <hr/>	<hr/> 3,105 <hr/>

#### TYPHUS FEVER.

Thirty-six cases of typhus fever were registered during the year, and six deaths occurred, which is equal to a case mortality rate of 16·6 per cent. and to a death-rate of 8 per million living, against an average of 18 for the years 1891-7. The cases occurred in the following districts:—Greenhead and London Road, Barrow-field, Woodside, Anderston, Kingston, and Pollokshields, W. Considerable difficulty now attends the recognition of this disease owing to its comparative rarity.

#### ENTERIC FEVER.

1,212 cases were registered during the year and 228 deaths occurred, giving a case mortality of 18·8 per cent. and a death-rate per 1,000 living of ·308 for the year. 87 per cent. of these cases were treated in hospital, and 86 per cent. of the deaths occurred there.

In dealing with the district death-rates from *all causes* it was pointed out that in those districts having a higher rate in 1891-7 than in the decade 1881-90 enteric fever contributed to this excess in six of them, so that our examination into the prevalence of this disease must to some extent be retrospective if we are rightly to appreciate the causes of the increased prevalence during the year 1898.

Since 1884, when the death-rate from this disease was ·388 per 1,000, the rate for 1898 has not been reached, and considerable importance, therefore, attaches to the following table:—

#### ENTERIC FEVER.—DEATH-RATE PER 1,000 LIVING.

Mean of 10 years, 1881-90,	...	...	...	=·255	per 1,000 living.
„ 5 years, 1886-90,	...	...	...	=·185	„ „
1891,	...	...	=·256	} ·197	„ „
1892,	...	...	=·155		
1893,	...	...	=·180		
1894,	...	...	=·218		
1895,	...	...	=·174	} ·249	„ „
1896,	...	...	=·197		
1897,	...	...	=·241		
1898,	...	...	=·308		

The lowest series of death-rates from enteric fever hitherto recorded in Glasgow occurred in the years 1885-88, and since then the average death-rate for these years (·170 per 1,000) has been exceeded in every year but one, viz., 1892. We have already seen that each district presenting an increase in the enteric fever death-rate of 1891-7 had also an increase in diarrhoeal death-rate for the corresponding years. This is an association which suggests the operation of local influences rather than the introduction of those of a distinctly epidemic character, and the suggestion is strengthened by what we know of the circumstances attending the prevalence of this disease in 1898.

<sup>1</sup> *Lancet*, 22nd October, 1898.—“Observations on an infectious disease in Lascars having close relations with variola and varicella.”

## SEASONAL PREVALENCE OF ENTERIC FEVER.

During the autumn months five groups of cases occurred which illustrated both forms of association, and in three instances the association was of an unmistakably epidemic character. The first in order of occurrence consisted of 24 cases scattered over the city, but all having a history which referred the period of infection to a holiday residence at a seaside resort on the River Clyde. Later, in the Western district of the city, 51 cases occurred which were traceable to milk infection, resulting from an illness occurring in the family of a dairy employee, and not recognised at the time to be enteric fever. Still later, 24 cases occurred among the inmates of the Abercromby Street Industrial Schools, also resulting from unrecognised illness occurring previously. Each of these outbreaks was fully described in the fortnightly reports of the period. But, in addition, there were three groups of cases where the association was a distinctly local one, due, that is, to local causes, and well illustrated in one instance by the combined presence of faulty sewerage and a wet ashpit. But all these together only account for 140 cases, and the remaining cases fall to be regarded as an exaggeration of the chronic prevalence of the disease resulting from the local conditions which the exceptional climatic conditions present in the autumn months of the year rendered peculiarly active. This will be made clear by a comparison of the monthly variations in the prevalence of the disease during the year 1898 and several preceding years.

In the following table the notifications are stated per 100,000 of the population given as a yearly rate calculated on the average daily number of notifications for the several months:—

	Year.	Jan.	Feb.	Mar.	Apl.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1890-7,	114	92	100	<b>116</b>	86	85	75	69	166	<b>203</b>	176	118	81
1898,	166	69	<b>103</b>	98	78	<b>108</b>	80	85	225	246	<b>402</b>	338	151

These figures are to be read by comparing the monthly number of cases with that given for the year.

As an average for eight years the figures for 1890-7 will fairly represent the normal seasonal variation of enteric fever in Glasgow, and they show that the prevalence increases from January to March, then falls to its point of lowest prevalence for the year in July, from which a rapid ascent is begun, which reaches its maximum in September, while December marks the lowest prevalence for the winter months. Comparing 1898 with this, the March prevalence is exceeded by an increase occurring in February and May, so that the usual decrease of the second quarter of the year does not occur, and while the autumnal rise had already begun in July, its maximum was not reached till October. But in the main the increased prevalence resulted from an extension of the autumn rise, and its prolongation beyond the usual period, as will be more apparent if the rates are restated in quarterly periods—

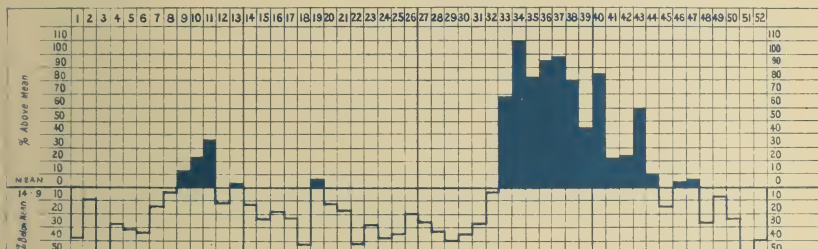
	1st Quarter.			2nd Quarter.		3rd Quarter.		4th Quarter.	
1890-7,	...	...	103	...	82	...	148	...	125
1898,	...	...	90	...	89	...	185	...	297

This apparent tendency towards the maintenance of a mean level of prevalence during the first two quarters is suggestive of the operation of some constant factor, the value of which can best be estimated by contrasting the weekly variations with the mean weekly prevalence for the year. For this purpose Diagrams I. and II. have been prepared to show this for the years 1893-7 and 1898. These are constructed on the weekly number of notifications, and, according to Diagram I., which illustrates the average experience of five years, the spring prevalence begins definitely in the 7th week, and reaches its maximum in the 9th, and, with slight exceptions, occurring in the 13th and 19th weeks, the mean weekly prevalence is not again exceeded till the 33rd week. The maximum prevalence is reached in the 34th week, when it exceeds the mean by 110 per cent., and by the 47th the weekly excess for the year is over. If each of these weekly readings is displaced about four weeks backward, so that time is allowed for the incubation of the disease and the development of symptoms, we may read off

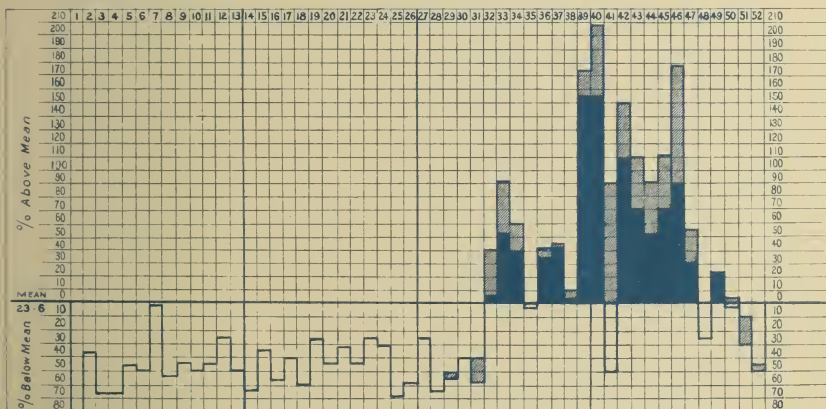


# Enteric Fever.

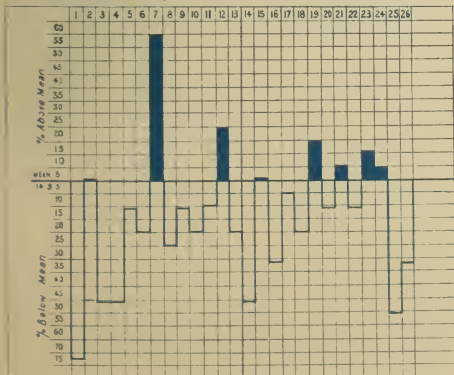
*Diagram I. 1893-97, Shewing Weekly Number of NOTIFICATIONS in Relation to Mean of these Years.*



*Diagram II. 1898, Shewing weekly Number of NOTIFICATIONS in Relation to Mean of Year.*



*Diagram III. Shewing Weekly Number of NOTIFICATIONS From Jan'y to June 1898, in relation to mean of Years 1893-97.*





directly the period when infection occurs. Thus the notifications received in the 34th week of the year will represent infection contracted in the 30th week, that is during the last week of July.

In contrast with this Diagram II. shows that in 1898 the weekly average prevalence of the disease for the year was not exceeded till the 32nd week. This does not arise from lessened prevalence of the disease in the first six months, but because the autumn increase raised the weekly average of cases for the year to 23·6 against 13·9 for the years 1893-7. Already in the 7th week the normal tendency of the disease to become more active had resulted in the average weekly prevalence for the year being reached, and in many weeks of the second quarter the disease displayed a considerable departure from the course of its usual prevalence.

This will be more clearly seen if we examine a chart of the weekly notifications constructed on the weekly mean of the years 1893-7, so that they may be compared with the first twenty-six weeks of Diagram I.

Now, we find that the cases in the 7th week form a considerable elevation, consisting, when individually examined, of cases in no way associated with each other, and in the second quarter of the year a series of weekly excesses was being established which formed, as it were, a prelude to the wide departure from the normal prevalence which took place in autumn.

The autumnal excess begins a week earlier, and is maintained in an irregular way till the 49th week. The actual maximum is only reached in the 40th week, but when the proportion due to recognised epidemics is excluded, the 39th week has an equal excess. The proportion contributed by the epidemic cases to the weekly excesses is indicated by a lighter shading of the columns—were their effect entirely removed the mean weekly number would be reduced by 2·7.

#### COMPARISON OF METEOROLOGICAL DATA.

It will be convenient here shortly to state the contrast which 1898 presented when compared with the earlier years of the decade, in respect of mean temperature and rainfall, although reference should be made to the extended table<sup>1</sup> of which the following is a summary :—

MEAN TEMPERATURE.								
		1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.
1890-7,	...	39·7°	...	51·7°	...	57·2°	...	42·9°
1898,	...	42·0	...	51·3	...	58·3	...	46·5

A higher mean temperature characterised the 1st, 3rd, and 4th quarters of the year, and the *minus* difference in the 2nd quarter is insignificant.

RAINFALL IN INCHES.								
	Year.	1st Quarter.		2nd Quarter.		3rd Quarter.		4th Quarter.
1890-97,	38·05	8·28	...	7·71	...	10·74	...	11·32
1898,	38·55	7·24	...	6·11	...	10·36	...	14·84

Combined with a higher mean temperature 1898 had a smaller rainfall in the 1st, 2nd, and 3rd quarters of the year. These cannot of themselves be regarded in any sense as direct causes of disease, but they supply two of the essential conditions—heat and moisture—on which organic life depends. If the extended table is referred to, it will be seen that the first considerable fall of rain was delayed till November, and we have already seen that the first considerable decline in the notifications occurred in December. The sequence of events is striking, and repeats a lesson already frequently insisted upon. The chronic prevalence of diarrhoea and enteric fever means surface pollution. A heavy rainfall removes this, and its action can be fairly imitated by artificial means.

#### DEATH-RATE FROM ENTERIC FEVER IN THE SEVERAL DISTRICTS.

For the purpose of extending this enquiry into the districts in which the increase has taken place, it will be necessary to take the death-rates, because notification did not exist during the decade 1881-90. The following table shows the death-rate per 1,000,000 for 1881-90, 1891-7, and 1898 :—

<sup>1</sup> Appendix, Table XIV.

TABLE XI.

GLASGOW. — ENTERIC FEVER. — DEATH-RATES PER MILLION IN EACH SANITARY DISTRICT FOR THE PERIODS 1881-90 AND 1891-97, AND FOR 1898.

SANITARY DISTRICTS.	1881-90.	1891-97.	1898.
— Blythwood, ... ..	160	139	<b>317</b>
1. Exchange, ... ..	210	177	<b>462</b>
2. Port-Dundas, ... ..	330	<b>407</b>	224
3. High Street and Closes, W., ...	120	<b>303</b>	296
4. St. Rollox, ... ..	160	<b>163</b>	<b>786</b>
5. Bellgrove and Dennistoun, ...	260	217	<b>413</b>
6. High Street and Closes, E., ...	130	<b>326</b>	<b>367</b>
7. Greenhead and London Road, ...	260	<b>271</b>	<b>472</b>
8. Barrowfield, ... ..	300	<b>343</b>	256
9. Monteith Row, ... ..	230	163	...
10. St. Andrew's Square, ... ..	160	<b>178</b>	<b>258</b>
11. Calton, ... ..	240	<b>374</b>	286
12. St. Enoch Square, ... ..	150	<b>404</b>	...
13. Brownfield, ... ..	210	<b>251</b>	<b>1,760</b>
14. Bridgegate and Wynds, ... ..	320	268	204
15. Woodside, ... ..	190	124	<b>219</b>
16. Cowcaddens, ... ..	160	<b>295</b>	<b>301</b>
17. Kelvinhaugh and Sandyford, ...	230	128	<b>354</b>
18. Anderston, ... ..	270	109	<b>387</b>
19. Kingston, ... ..	200	187	176
20. Laurieston, ... ..	220	<b>342</b>	229
21. Hutcheson Square, ... ..	220	157	<b>318</b>
22. Gorbals, ... ..	340	291	265
— Springburn and Rockvilla, ...	210	189	<b>365</b>
23. Govanhill, ... ..	...	137	<b>286</b>
24. Crosshill, ... ..	...	210	...
25. Langside and Mount Florida, ...	...	150	...
26. Pollokshields, E., and Strathbungo,	...	87	...
27. Pollokshields, W., and Strathbungo,	...	39	...
28. Hillhead, ... ..	...	59	...
29. Kelvinside, ... ..	...	...	...
30. Maryhill, ... ..	...	166	<b>199</b>
31. Possilpark, ... ..	...	232	167
CITY, ... ..	<b>230</b>	<b>199</b>	<b>312</b>

TABLE XII.

DISTRICTS WITH DEATH-RATE FROM ENTERIC FEVER INCREASING IN 1891-97 AND 1898 AS COMPARED WITH 1881-90—DEATH-RATES STATED PER MILLION LIVING.

Districts.	Period.	All Causes.	Enteric Fever.	Diarrhoea.	Phthisis.	Acute Diseases of Lungs.	Birth-rate.	Infant Mortality per 1,000 Births.
16. Cowcaddens, ...	1881-90, ...	32,550	160	1,110	3,350	8,370	42·8	190
	1891-97,	<b>32,773</b>	295	<b>1,447</b>	2,688	<b>8,823</b>	43·9	<b>215</b>
13. Brownfield, ...	1881-90, ...	30,370	210	990	3,340	7,820	37·1	199
	1891-97,	<b>31,326</b>	251	<b>1,129</b>	2,259	<b>7,988</b>	40·6	183
6. High Street and Closes, E.,	1881-90,	33,590	130	860	4,290	9,020	36·4	191
	1891-97,	31,197	326	<b>979</b>	2,338	<b>9,024</b>	38·8	<b>193</b>
4. St. Rollox, ...	1881-90,	22,650	160	550	2,660	5,050	39·4	138
	1891-97,	21,632	163	427	2,039	4,639	36·9	<b>144</b>
7. Greenhead and London Road,	1881-90,	24,910	260	890	3,000	5,180	40·9	149
	1891-97,	23,296	271	<b>1,293</b>	2,195	5,063	40·2	<b>150</b>
10. St. Andrew's Square, ...	1881-90,	24,490	160	620	2,790	6,490	30·8	149
	1891-97,	<b>25,611</b>	178	<b>1,035</b>	2,675	<b>6,956</b>	31·9	<b>173</b>

In three of these the death-rates from all causes increased, in five show an increase in the diarrhoeal occurred, and in five also there was an increased infantile mortality. All had a lower death-rate from phthisis, while acute lung diseases increased in four.

<sup>1</sup> These are 4 (St. Rollox); 6 (High Street and Closes, E.); 7 (Greenhead and London Road); 10 (St. Andrew's Square); 13 (Brownfield); 16 (Cowcaddens).

For comparison with other towns the following tables are given:—

TABLE XIII.

DEATH-RATE PER 100,000 FROM ENTERIC FEVER AND DIARRHŒA IN THE PRINCIPAL TOWNS OF SCOTLAND FOR THE SEVEN YEARS 1891-7 AND FOR 1898.<sup>1</sup>

	Enteric Fever.				Diarrhœa.	
	1891-7.	1898.			1891-7.	1898.
Glasgow, ... ..	20	31			56	71
Edinburgh, ... ..	15	10			35	56
Dundee, ... ..	17	5			78	94
Aberdeen, ... ..	9	10			44	55
Leith, ... ..	13	11			42	79
Paisley, ... ..	31	54			53	94
Greenock, ... ..	12	35			72	98

TABLE XIV.

DEATH-RATE PER 100,000 FROM FEVER AND DIARRHŒA IN CERTAIN ENGLISH TOWNS FOR THE TEN YEARS 1888-97 AND FOR 1898.<sup>2</sup>

	Fever.		Diarrhœa.	
	1888-97.	1898.	1888-97.	1898.
London, ... ..	15	13	67	97
Liverpool, ... ..	35	26	117	154
Manchester, ... ..	26	23	110	184
Birmingham, ... ..	16	22	111	136
Leeds, ... ..	22	22	110	122
Sheffield, ... ..	23	40	121	189

## DIARRHŒA.

It will be convenient here to deal with this class of diseases according to two different methods of classification, using the Registrar-General's figures for a comparison of the city rate over several years, and adopting the local method of classification when contrasting the death-rate of the several city districts. The former is the method most widely in use, and the rate thus given is comparable with that for other towns, but it leaves out several forms of the disease which, by local custom, have been included in the district diarrhœal rates in Glasgow for many years.

In the following table the deaths and death-rates *per million* for each year since 1894 are given, with the observation that the figures for the years 1897-8 are subject to revision—the Registrar-General's detailed annual reports for these years not being yet forthcoming:—

TABLE XV.

GLASGOW.—DIARRHŒAL DISEASES.—DEATHS AND DEATH-RATES PER MILLION AT CERTAIN AGES.<sup>3</sup>

YEAR.	DEATHS.				Death-rate per Million.			Death-rate under 1 year per 10,000 born.
	Under 1 year.	1 and under 5 years.	5 years and upwards.	All Ages.	Under 5 years.	5 years and upwards.	All Ages.	
1894	126	52	63	241	2,044	105	351	56
1895	225	114	109	478	4,181	179	687	112
1896	188	89	59	336	3,098	96	477	78
1897	—	402	67	469	4,434	107	656	—
1898	—	415	92	507	4,518	145	700	—

<sup>1</sup> Detailed Reports, 1891-6; Annual Summaries, 1897-8.

<sup>2</sup> Registrar-General's Annual Summary for 1898.

<sup>3</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.



But as the movement of a death-rate can with greater accuracy be gauged by comparing groups of years, the average death-rate is given in the following table for several periods at all ages, and also at ages under and, again, over five years.

GLASGOW.—DIARRHOEAL DEATH-RATE PER MILLION.

	Under five years.	Five years and over.	All Ages.
Five years (1886-90), ...	... 2,985	126	493
„ (1891-95), ...	... 3,313	139	543
1896, ...	... 3,098	96	477
1897, ...	... 4,434	107	656
1898, ...	... 4,518	145	700

AGE INCIDENCE OF DIARRHOEAL DEATHS.

If now we compare the death-rate of the several age-groups in 1896-8 with the corresponding rates in the closing years of last decade, we have the following contrast:—

DIARRHOEAL DEATH-RATE PER MILLION.

All Ages — 1886-90	=	493	
„ — 1896-98	=	611	
Difference, ...		118	= an increase of 24 per cent. in 1896-8.
Ages 0-5 — 1886-90	=	2,985	
„ — 1896-98	=	4,017	
Difference, ...		1,032	= „ of 35 per cent. „
Ages 5 up—1886-90	=	126	
„ — 1896-98	=	116	
Decrease, ...		10	

In the periods thus compared the death-rate at ages over five shows a decrease. In the years 1891-5, however, it was greater by 10 per cent., and in 1898 by 15 per cent., than in 1886-90; but in these years the deaths under five years increased by 11 per cent. and 51 per cent. respectively, so that, practically, the increase in the diarrhoeal rate at all ages, when a series of years is compared, is due almost wholly to an increase in the number of deaths among children.

DIARRHOEAL DEATH-RATES IN THE SEVERAL SANITARY DISTRICTS.

Now we may revert to the local classification of diarrhoeal deaths in order that the several districts of the city may be compared over a series of years.

It was observed, in dealing with enteric fever, that five of the six districts, which had an increasing death-rate from that disease in 1891-7 and in 1898, showed also an increase in the diarrhoeal rate, and in the following table it will be seen that, when 1891-7 is compared with 1881-90, only three districts had a lower diarrhoeal death-rate in the 1891-7 period, and District 14 alone a still lower rate in 1898. This district, together with District 10 (St. Andrew's Square), are the only two districts with a lower rate in 1898 than the average of the ten years 1881-90, but in the average of the years 1891-7 the rate for the latter district is much in excess of that for the decade 1881-90:—

TABLE XVI.

GLASGOW.—DIARRHOEAL DISEASES.—DEATH-RATES PER MILLION IN EACH SANITARY DISTRICT FOR 1881-90, 1891-7, AND FOR 1898.<sup>1</sup>

SANITARY DISTRICTS.	1881-90.	1891-7.	1898.
— Blythswood, ... ..	270	425	317
1. Exchange, ... ..	450	511	692
2. Port-Dundas, ... ..	870	939	1,570
3. High Street and Closes, W., ...	580	774	1,184
4. St. Rollox, ... ..	550	<b>427</b>	786
5. Bellgrove and Dennistoun, ...	560	699	826
6. High Street and Closes, E., ...	860	979	1,838
7. Greenhead and London Road, ...	890	1,293	1,431
8. Barrowfield, ... ..	1,120	1,540	2,123
9. Monteith Row, ... ..	460	620	466
10. St. Andrew's Square, ... ..	620	1,035	517
11. Calton, ... ..	990	1,364	1,193
12. St. Enoch Square, ... ..	490	808	709
13. Brownfield, ... ..	990	1,129	1,760
14. Bridgegate and Wynds, ... ..	1,210	<b>1,181</b>	<b>613</b>
15. Woodside, ... ..	540	<b>533</b>	801
16. Cowcaddens, ... ..	1,110	1,447	1,503
17. Kelvinhaugh and Sandyford, ...	320	359	579
18. Anderston, ... ..	810	963	1,266
19. Kingston, ... ..	540	706	578
20. Laurieston, ... ..	780	1,074	1,146
21. Hutcheson Square, ... ..	770	919	867
22. Gorbals, ... ..	960	1,367	1,855
— Springburn and Rockvilla, ...	590	663	1,186
23. Govanhill, ... ..	...	367	908
24. Crosshill, ... ..	...	30	295
25. Langside and Mount Florida, ...	...	254	526
26. Pollokshields, E., and Strathbungo,	...	218	515
27. Pollokshields, W., and Bellahouston,	...	117	356
28. Hillhead, ... ..	...	79	349
29. Kelvinside, ... ..	...	112	323
30. Maryhill, ... ..	...	550	628
31. Possilpark and Barnhill, ... ..	...	807	833
CITY, ... ..	700	785	939

With the single exception of District 14, therefore, the diarrhoeal rates of the present compare very unfavourably with those of the last decade in all the districts of the old city.

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

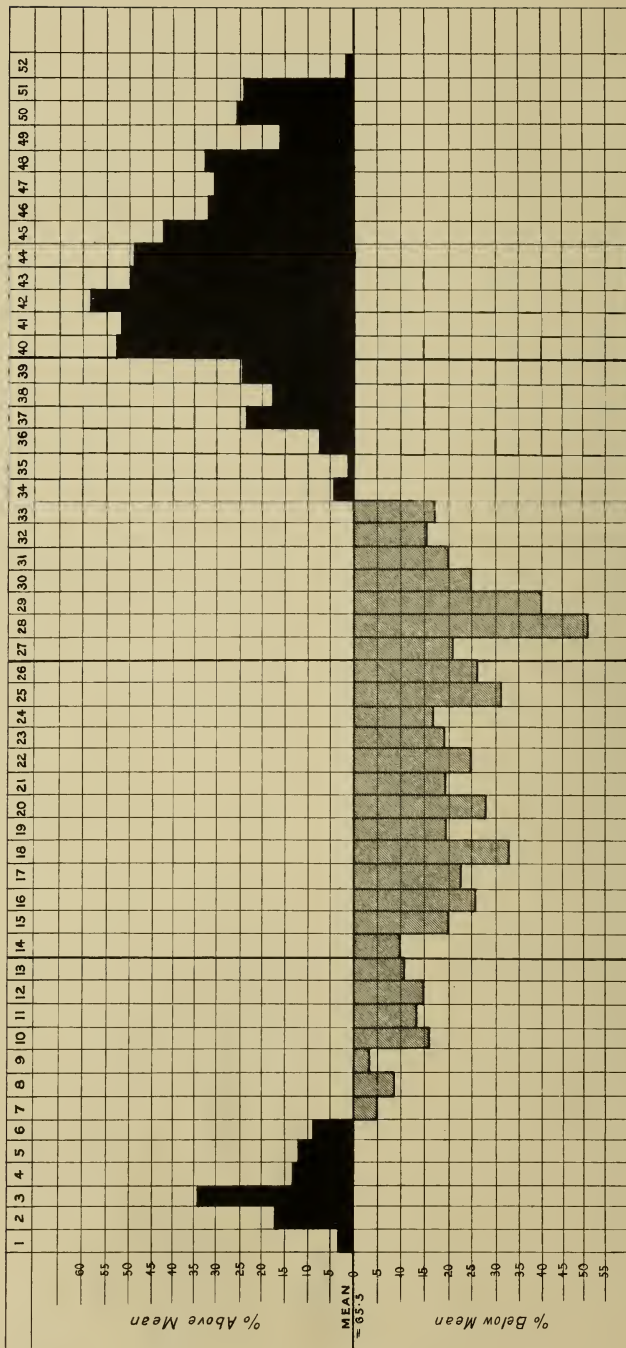




# Scarlet Fever Notifications 1893-98

Diagram IV.

Showing Weekly Number in Relation to Mean of these Years.



## SCARLET FEVER.

3,620 cases of scarlet fever were registered during the year, and 190 deaths occurred, which is equal to a death-rate per 1,000 living of .260 (as compared with .305 in the years 1891-7); 82 per cent. of the cases were treated in hospital, and 76 per cent. of the deaths occurred there. For several periods the rates are as follows:—

Five years (1886-90),	death-rate per million =	...	...	367
„ (1890-95),	„ „ =	...	...	354
1896, ...	„ „ =	...	...	197
1897, ...	„ „ =	...	...	184
1898, ...	„ „ =	...	...	260

} 214

## RELATIVE PREVALENCE AND CASE MORTALITY.

The case rate per 1,000 living, and the case mortality of scarlet fever for 1890-97 and 1898, can be stated as follows:—

	Case-rate per 1,000 living.	Death-rate per 1,000 living.	Case Mortality per cent.
1890-97, ... ..	5.26	.305	5.8
1898, ... ..	4.95	.260	5.2

In the periods compared the diminished prevalence in 1898 has therefore been accompanied by a decrease in the fatality of the diseases.

## SEASONAL PREVALENCE.

Diagram IV. represents the weekly variations in the prevalence of the disease throughout the year. It is constructed on the average weekly number of notifications stated as a percentage above or below the weekly mean for the years 1893-8.

## DISTRICT MORTALITY.

In the following table the district death-rates of two periods are given, and it will be observed that during 1898 no death from scarlet fever occurred in Districts 13, 14, 26, and 28. (*See Table XVII., page 32.*)

## DIPHTHERIA AND MEMBRANOUS CROUP.

These two forms of disease are dealt with together as being essentially the same. 433 cases were registered during the year, and 113 deaths occurred, which is equal to a death-rate of .154 per 1,000 living. 60 per cent. of the cases were treated in hospital, and 48 per cent. of the deaths occurred there.

Over a series of years the death-rate from diphtheria and croup has been as follows:—<sup>1</sup>

Five years (1886-90),	...	=	.466 per 1,000 living.
„ (1890-95),	...	=	.381 „
1896, ... ..	...	=	.194 „
1897, ... ..	...	=	.203 „
1898, ... ..	...	=	.182 „

## SEASONAL PREVALENCE.

This is shown in the following table for the years 1890-7 and 1898. In the autumn and winter months the disease assumes its greatest prevalence, and the seasonal variations follow the lines presented by scarlet fever. (*See Table XVIII., page 33.*)

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

TABLE XVII.

GLASGOW.—SCARLET FEVER.—DEATH-RATE PER MILLION FOR THE SEVEN YEARS 1891-7  
AND FOR 1898 IN EACH SANITARY DISTRICT.<sup>1</sup>

SANITARY DISTRICTS.	1891-7.	1898.
— Blythwood, ... ..	218	246
1. Exchange, ... ..	252	92
2. Port-Dundas, ... ..	282	224
3. High Street and Closes, W., ... ..	394	99
4. St. Rollox, ... ..	392	60
5. Bellgrove and Dennistoun, ... ..	393	358
6. High Street and Closes, E., ... ..	420	367
7. Greenhead and London Road, ... ..	295	253
8. Barrowfield, ... ..	332	219
9. Monteith Row, ... ..	229	233
10. St. Andrew's Square, ... ..	357	258
11. Calton, ... ..	294	95
12. St. Enoch Square, ... ..	269	354
13. Brownfield, ... ..	418	—
14. Bridgegate and Wynds, ... ..	188	—
15. Woodside, ... ..	329	350
16. Cowcaddens, ... ..	339	120
17. Kelvinhaugh and Sandyford, ... ..	250	290
18. Anderston, ... ..	348	422
19. Kingston, ... ..	318	352
20. Laurieston, ... ..	374	115
21. Hutcheson Square, ... ..	345	231
22. Gorbals, ... ..	323	177
— Springburn and Rockvilla, ... ..	353	213
23. Govanhill, ... ..	229	908
24. Crosshill, ... ..	330	295
25. Langside and Mount Florida, ... ..	135	75
26. Pollokshields and Strathbungo, ... ..	203	—
27. Pollokshields (W.) and Bellahouston, ... ..	157	356
28. Hillhead, ... ..	59	—
29. Kelvinside, ... ..	197	162
30. Maryhill, ... ..	196	165
31. Possilpark and Barnhill, ... ..	292	167
CITY, ... ..	305	260

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

TABLE XVIII.

GLASGOW.—DIPHTHERIA AND MEMBRANOUS CROUP.—CASES REGISTERED AND ANNUAL CASE-RATE PER 100,000 LIVING FOR EACH MONTH FOR THE EIGHT YEARS 1890-7 AND FOR 1898.

MONTH.	CASES REGISTERED.		ANNUAL CASE-RATE PER 100,000.	
	1890-7.	1898.	1890-7.	1898.
January, ... ..	495	46	111	74
February, ... ..	497	39	123	69
March, ... ..	462	39	103	63
April, ... ..	359	26	83	43
May, ... ..	342	24	76	39
June, ... ..	304	22	70	37
July, ... ..	228	19	51	31
August, ... ..	383	33	86	53
September, ... ..	492	34	114	57
October, ... ..	554	54	124	87
November, ... ..	534	46	123	76
December, ... ..	487	51	109	82
Year, . . . . .	5,137	433	98	59

DISTRICT MORTALITY.<sup>1</sup>

In the following table the death-rate for each district is shown, that for 1898 being compared with the average of the years 1891-7. No deaths from diphtheria occurred during 1898 in districts 9, 14, 24, 27, and 29 :—

TABLE XIX.

GLASGOW.—DIPHTHERIA AND MEMBRANOUS CROUP.—DEATH-RATES PER MILLION FOR THE SEVEN YEARS 1891-7 AND FOR 1898 IN EACH SANITARY DISTRICT.

SANITARY DISTRICTS.	1891-7.	1898.
— Blythswood, ... ..	237	141
1. Exchange, ... ..	287	46
2. Port-Dundas, ... ..	438	673
3. High Street and Cloves, W., ... ..	212	99
4. St. Rollox, ... ..	187	60
5. Bellgrove and Dennistoun, ... ..	274	83
6. High Street and Cloves, East, ... ..	93	184
7. Greenhead and London Road, ... ..	260	168
8. Barrowfield, ... ..	243	403
9. Monteith Row, ... ..	229	—
10. St. Andrew's Square, ... ..	285	258
11. Calton, ... ..	268	286
12. St. Enoch Square, ... ..	225	354
13. Brownfield, ... ..	377	293
14. Bridgegate and Wynds, ... ..	188	—
15. Woodside, ... ..	276	87
16. Cowcaddens, ... ..	330	602
17. Kelvinhaugh and Sandyford, ... ..	250	129
18. Anderston, ... ..	313	176
19. Kingston, ... ..	216	151
20. Laurieston, ... ..	407	229
21. Hutcheson Square, ... ..	268	115
22. Gorbals, ... ..	194	88
— Springburn and Rockvilla, ... ..	329	213
23. Govanhill, ... ..	321	143
24. Crosshill, ... ..	300	—
25. Langside and Mount Florida, ... ..	179	75
26. Pollokshields and Strathbungo, ... ..	247	74
27. Pollokshields (West) and Bellahouston, ... ..	391	—
28. Hillhead, ... ..	178	116
29. Kelvinside, ... ..	112	—
30. Maryhill, ... ..	354	198
31. Possilpark and Barnhill, ... ..	383	222
CITY, ... ..	264	154

<sup>1</sup> These district rates are based on the corrected deaths, and include membranous croup. The difference between the Registrar-General's rate and that locally extracted arises from this cause, and from the exclusion of simple croup from the local rates.

In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

## MEASLES.

9,738 cases of measles were registered during the year, but the number registered in any year must always fall very much short of the number of persons attacked by the disease. 536 deaths occurred, which is equal to a death-rate per 1,000 living, at all ages, of ·740.

For several periods the death-rate per 1,000 living is as follows:—<sup>1</sup>

Five years (1886-90),	... ..	=	·678	
„ (1891-5),	... ..	=	·807	
1896,	... ..	=	1·160	} Average, ·901
1897,	... ..	=	·803	
1898,	... ..	=	·740	

## DISTRICT MORTALITY.

This is shown in the following table. In several districts south of the river, and also in Brownfield, Cowcaddens, and Springburn, the fatality of the disease was much in excess of the mean for the city.

TABLE XX.

GLASGOW.—MEASLES.—DEATH-RATES PER MILLION FOR THE SEVEN YEARS 1891-7 AND FOR 1898 IN EACH SANITARY DISTRICT.<sup>1</sup>

SANITARY DISTRICTS.	1891-7.	1898.
— Blythswood, ... ..	302	317
1. Exchange, ... ..	573	739
2. Port-Dundas, ... ..	1,471	449
3. High Street and Clooses, West, ... ..	744	296
4. St. Rollox, ... ..	1,024	604
5. Bellgrove and Dennistoun, ... ..	845	675
6. High Street and Clooses, East, ... ..	933	919
7. Greenhead and London Road, ... ..	1,033	690
8. Barrowfield, ... ..	1,287	732
9. Monteith Row, ... ..	555	699
10. St. Andrew's Square, ... ..	749	775
11. Calton, ... ..	1,217	954
12. St. Enoch Square, ... ..	269	709
13. Brownfield, ... ..	1,506	1,174
14. Bridgegate and Wynds, ... ..	1,100	818
15. Woodside, ... ..	565	525
16. Cowcaddens, ... ..	1,482	1,864
17. Kelvinhaugh and Sandyford, ... ..	298	257
18. Anderston, ... ..	1,400	457
19. Kingston, ... ..	794	553
20. Laurieston, ... ..	1,400	1,719
21. Hutcheson Square, ... ..	1,024	1,033
22. Gorbals, ... ..	980	2,209
— Springburn and Rockvilla, ... ..	1,041	1,034
23. Govanhill, ... ..	357	955
24. Crosshill, ... ..	150	—
25. Langside and Mount Florida, ... ..	105	75
26. Pollokshields and Strathbungo, ... ..	29	74
27. Pollokshields (West) and Bellahouston, ... ..	39	534
28. Hillhead, ... ..	99	—
29. Kelvinside, ... ..	225	—
30. Maryhill, ... ..	587	893
31. Possilpark and Barnhill, ... ..	847	611
CITY, ... ..	824	737

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

## WHOOPIING-COUGH.

During the year 2,103 cases of this disease were registered, and 703 deaths occurred, which is equal to a death-rate per 1,000 living of ·980.

Death-rate per 1,000 living for several periods:—<sup>1</sup>

Five years (1886-90),	...	...	=	1·208	
„ (1891-95),	...	...	=	·908	
1896,	...	...	...	=	·918
1897,	...	...	...	=	1·197
1898,	...	...	...	=	·980

} Average, 1·031

TABLE XXI.

GLASGOW.—WHOOPIING-COUGH.—DEATH-RATE PER MILLION FOR THE SEVEN YEARS 1891-7 AND FOR 1898 IN EACH SANITARY DISTRICT.<sup>1</sup>

SANITARY DISTRICTS.	1891-7.	1898.
— Blythwood, ... ..	495	211
1. Exchange, ... ..	654	415
2. Port-Dundas, ... ..	1,252	897
3. High Street and Closes, West, ... ..	1,002	592
4. St. Rollox, ... ..	1,193	544
5. Bellgrove and Dennistoun, ... ..	955	1,061
6. High Street and Closes, East, ... ..	1,212	551
7. Greenhead and London Road, ... ..	1,140	1,213
8. Barrowfield, ... ..	1,150	1,245
9. Monteith Row, ... ..	979	233
10. St. Andrew's Square, ... ..	963	775
11. Calton, ... ..	1,344	1,097
12. St. Enoch Square, ... ..	1,436	—
13. Brownfield, ... ..	1,296	2,348
14. Bridgegate and Wynds, ... ..	1,235	1,841
15. Woodside, ... ..	784	772
16. Cowcaddens, ... ..	1,545	1,503
17. Kelvinhaugh and Sandyford, ... ..	618	515
18. Anderston, ... ..	1,197	2,496
19. Kingston, ... ..	734	854
20. Laurieston, ... ..	1,074	2,407
21. Hutcheson Square, ... ..	1,165	1,502
22. Gorbals, ... ..	1,335	972
— Springburn and Rockvilla, ... ..	1,128	943
23. Govanhill, ... ..	742	812
24. Crosshill, ... ..	90	739
25. Langside and Mount Florida, ... ..	179	450
26. Pollokshields and Strathbungo, ... ..	116	221
27. Pollokshields (West) and Bellahouston, ... ..	235	178
28. Hillhead, ... ..	197	—
29. Kelvinside, ... ..	84	—
30. Maryhill, ... ..	971	562
31. Possilpark and Barnhill, ... ..	878	888
CITY, ... ..	926	961

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.



## TUBERCULOUS DISEASES.

*Phthisis*.—In 501 cases of phthisis occurring during the year, disinfection by the department was carried out.

During the year 1,404 deaths were registered, which is equal to a death-rate per 1,000 living of 1·938.<sup>1</sup>

For several periods the rate was as follows:—<sup>1</sup>

Five years (1886-90),	... ..	=	2·507 per 1,000
„ (1891-95),	... ..	=	2·273 „
1896,	... ..	=	1·903 „
1897,	... ..	=	1·985 „
1898,	... ..	=	1·938 „

## DISTRICT INCIDENCE OF PHTHISIS.

In the following table the death-rate in each of the Sanitary Districts for 1898 is compared with the average for the years 1891-7:—

TABLE XXII.

GLASGOW.—PHTHISIS.—DEATH-RATES PER MILLION FOR THE SEVEN YEARS 1891-7 AND FOR 1898 IN EACH SANITARY DISTRICT.<sup>1</sup>

SANITARY DISTRICTS.	1891-7.	1898.
— Blythwood, ... ..	1,643	1,092
1. Exchange, ... ..	1,963	1,662
2. Port-Dundas, ... ..	2,723	2,915
3. High Street and Cloves, West, ... ..	2,838	2,170
4. St. Rollox, ... ..	2,039	2,116
5. Bellgrove and Dennistoun, ... ..	1,892	1,419
6. High Street and Cloves, East, ... ..	2,938	4,411
7. Greenhead and London Road, ... ..	2,195	1,566
8. Barrowfield, ... ..	2,543	2,306
9. Monteith Row, ... ..	2,285	1,630
10. St. Andrew's Square, ... ..	2,675	1,292
11. Calton, ... ..	2,695	2,624
12. St. Enoch Square, ... ..	2,334	2,481
13. Brownfield, ... ..	2,259	2,347
14. Bridgegate and Wynds, ... ..	3,864	3,885
15. Woodside, ... ..	1,514	1,253
16. Cowcaddens, ... ..	2,688	2,045
17. Kelvinhaugh and Sandyford, ... ..	1,401	1,062
18. Anderston, ... ..	2,577	2,355
19. Kingston, ... ..	2,164	1,885
20. Laurieston, ... ..	2,426	1,834
21. Hutcheson Square, ... ..	1,960	1,719
22. Gorbals, ... ..	2,734	2,651
— Springburn and Rockvill, ... ..	1,767	1,824
23. Govanhill, ... ..	1,530	1,529
24. Crosshill, ... ..	1,171	1,478
25. Langside and Mount Florida, ... ..	1,166	826
26. Pollokshields and Strathbungo, ... ..	814	515
27. Pollokshields (West) and Bellahouston, ... ..	548	890
28. Hillhead, ... ..	750	349
29. Kelvinside, ... ..	309	486
30. Maryhill, ... ..	1,303	1,555
31. Possilpark and Barnhill, ... ..	1,453	1,388
CITY, ... ..	2,087	1,811

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

## OTHER FORMS OF TUBERCULOUS DISEASE.

In a former enquiry into the distribution of tuberculous diseases in Glasgow, the incidence of the several forms which are not phthisis was examined, and the enquiry extended backwards to the year 1883, when a rearrangement of the system of classification of these deaths was introduced by the Registrar-General. The following table is a continuation of Table I. of that paper, with some unimportant alterations in the figures for 1894:—

TABLE XXIII.

GLASGOW.—TUBERCULOUS DISEASES.—DEATHS AND DEATH-RATES PER MILLION FOR THE FIVE YEARS 1894-8.

YEAR.	DEATHS.						DEATH-RATE PER MILLION.					
	Tubes Mesenterica.	Tubercular Meningitis.	Other Forms of Tuberculosis (Scrofula).	Tuberculous Diseases (Not Phthisis).	Phthisis.	All Tuberculous Diseases.	Tubes Mesenterica.	Tubercular Meningitis.	Other Forms of Tuberculosis (Scrofula).	Other Tuberculous Diseases (Not Phthisis).	Phthisis.	All Tuberculous Diseases.
1894	186	229	168	583	1,560	2,143	270	332	245	847	2,271	3,119
1895	232	229	166	627	1,584	2,211	333	329	239	901	2,276	3,177
1896	185	246	142	573	1,342	1,915	262	349	202	813	1,903	2,716
1897	191	260	143	594	1,419	2,013	267	364	200	831	1,985	2,816
1898	196	254	139	589	1,404	1,993	270	351	192	813	1,938	2,751

## OTHER ACUTE DISEASES OF THE LUNGS.

This class comprises bronchitis, pneumonia, and pleurisy. For several periods the death-rate per 1,000 living from these causes is as follows:—<sup>1</sup>

Five years (1886-90), ...	...	...	...	...	=	5.268
„ (1891-95), ...	...	...	...	...	=	5.415
1896, ...	...	...	...	...	=	4.101
1897, ...	...	...	...	...	=	4.749
1898, ...	...	...	...	...	=	4.207

In connection with the increased rate during the period 1891-5, the fatal prevalence of influenza during these years will be remembered.

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

DISTRICT INCIDENCE.<sup>1</sup>

In the following table the district death-rates from these causes for 1898 is compared with the average for the years 1891-7 :—

TABLE XXIV.

GLASGOW.—ACUTE DISEASES OF LUNGS.—DEATH-RATES PER MILLION FOR THE SEVEN YEARS 1891-7 AND FOR 1898 IN EACH SANITARY DISTRICT.

SANITARY DISTRICTS.	1891-7.	1898.
— Blythwood, ... ..	3,404	2,711
1. Exchange, ... ..	3,939	3,555
2. Port-Dundas, ... ..	6,448	<b>7,401</b>
3. High Street and Closes, West, ... ..	7,102	5,426
4. St. Rollox, ... ..	4,639	2,841
5. Bellgrove and Dennistoun, ... ..	4,330	3,995
6. High Street and Closes, East, ... ..	9,024	5,146
7. Greenhead and London Road, ... ..	5,063	4,547
8. Barrowfield, ... ..	6,509	5,893
9. Monteith Row, ... ..	5,028	4,192
10. St. Andrew's Square, ... ..	6,956	5,684
11. Calton, ... ..	7,663	5,389
12. St. Enoch Square, ... ..	6,462	<b>8,505</b>
13. Brownfield, ... ..	7,988	7,336
14. Bridgegate and Wynds, ... ..	10,386	8,996
15. Woodside, ... ..	4,171	3,512
16. Cowcaddens, ... ..	8,823	<b>9,503</b>
17. Kelvinhaugh and Sandyford, ... ..	2,992	1,995
18. Anderston, ... ..	6,838	6,328
19. Kingston, ... ..	4,547	3,543
20. Laurieston, ... ..	7,001	5,845
21. Hutcheson Square, ... ..	5,342	4,406
22. Gorbals, ... ..	8,493	6,097
— Springburn and Rockvilla, ... ..	4,692	3,800
23. Govanhill, ... ..	2,996	2,532
24. Crosshill, ... ..	2,973	1,182
25. Langside and Mount Florida, ... ..	1,615	1,427
26. Pollokshields and Strathbungo, ... ..	1,482	1,178
27. Pollokshields (West) and Bellahouston, ... ..	1,253	1,067
28. Hillhead, ... ..	1,302	696
29. Kelvinside, ... ..	1,095	<b>1,456</b>
30. Maryhill, ... ..	3,456	3,341
31. Possilpark and Barnhill, ... ..	3,883	3,609
CITY, ... ..	5,031	4,173

<sup>1</sup> In this and other Tables it must be noted that the rates for the whole city are calculated on the Registrar-General's deaths and population ; wherever district comparisons are instituted, the corrected deaths and the Medical Officer's estimate of the population are used.

## UNINHABITABLE HOUSES.

By the operation of the 32nd Clause of the Glasgow Police (Amendment) Act, 1890, 62 houses were closed during the year—39 being houses of one apartment, and 23 houses of two apartments. Six of the one-apartment houses and 3 of the two-apartment houses were unoccupied at the time of closure. The number of persons displaced was 194, 22 of whom were lodgers, and 88 original tenants of one-roomed houses and 84 tenants of two-roomed houses.

In connection with a not inconsiderable proportion of these houses in the Calton District the certificate of uninhabitability was based on the existence of an extreme degree of structural disrepair. Many of them were well lit and ventilated, but the broken condition of the walls, flooring, and ceiling made any effort at cleanliness futile. Combined with this there was absence of suitable latrine accommodation.

The total number closed since the Act came into operation is as follows:—

## UNINHABITABLE HOUSES.

	One Apart- ment.	Two Apart- ments.	Three Apart- ments.	Four Apart- ments.	House and Shop.	TOTAL.
Houses closed to 31st December, 1897,	386	144	9	2	3	544
Houses closed in 1898,... ..	39	23	—	—	—	62
Houses closed to end of 1898,... ..	425	167	9	2	3	606

The mode of occupancy, average rental paid per occupant, and average cubic space provided in the houses closed in 1898, are summarised in the following table:—

1898.	Original Tenants.		Sub-let Houses (Lodgers).	
	1 Apt.	2 Apt.	1 Apt.	2 Apt.
Number of persons displaced, ... ..	88	84	22	0
Average rental paid per head per week,	5½d.	5½d.	1s. 7d. <sup>1</sup>	0d.
	Feet.	Feet.	Feet.	Feet.
Average cubic space per house, ...	1,300	1,768	1,214	0

## OFFENSIVE TRADES.

## PUBLIC HEALTH (SCOTLAND) ACT, 1897, SECTION 32.

Advantage has been taken of the extended powers conferred on Local Authorities under this section. Bye-laws for regulating the conduct of offensive trades, and the structure of the premises in which they are carried on, were prepared for all those defined in this section (except for the slaughtering of cattle and horses for food purposes), and for two others—glue and size making, and for the manufacture of cat gut—which were, with the approval of the Local Government Board, declared by the Local Authority to be offensive businesses within the meaning of this section. These bye-laws are at present before the Local Government Board for confirmation. During the year the sanction of the Local Authority was obtained for the establishment of the following businesses:—

1. { Bone Boiler.  
 { Manure Manufacturer.  
 { Tallow Melter.

<sup>1</sup> These are sub-let “furnished” apartments, or farmed-out houses.

2. { Tallow Melter.  
Grease Manufacturer.  
Bone Boiler.
3. Knacker.
4. Tallow Melter.
5. { Bone Boiler.  
Grease Manufacturer.
6. Tallow Melter.

An application for the sanction of the Local Authority to the establishment of the business of a horse slaughterer at the Old Barracks Carnival was refused, and one for the establishment of a gut-scraping business was continued.

On one occasion advantage was taken of the powers conferred by Section 36 of the Act on ten ratepayers to make representation to the Local Authority concerning the offensiveness of any business carried on within the district, and the complaint was remitted to the Medical Officer for report. The case was an excellent illustration of the value of bye-laws for regulating the conduct of such businesses, and on a representation being made to the manufacturer the cause of complaint ceased.

#### RETURN OF PERSONS ADMITTED TO CITY RECEPTION-HOUSES.

The number of persons removed during the year for supervision owing to the existence of infectious disease (chiefly typhus fever) in their own homes was 159, and the following table shows the corresponding number for each year since 1888:—

TABLE XXV.

GLASGOW.—RETURN OF PERSONS ADMITTED TO RECEPTION-HOUSES FROM 1888 TO 1898.

YEAR.	WEAVER STREET.	SOUTH YORK STREET.	TOTAL.
1888	304	—	304
1889	183	—	183
1890	230	—	230
1891	327	—	327
1892	205	171	376
1893	470	406	876
1894	124	159	283
1895	376	513	889
1896	25	174	199
1897	149	106	255
1898	75	84	159

#### RABIES.

251 dogs were reported by the police during 1898 as having bitten persons, and an enquiry was made into each case, with the view of ascertaining whether any evidence existed that the animal suffered from rabies. In no instance was this found.



\*

## APPENDIX.





TABLE I.—GLASGOW.—POPULATION; BIRTHS AND DEATHS; BIRTH-RATES AND DEATH-RATES PER 1,000, ALSO DEATHS UNDER 1 YEAR AND DEATH-RATES UNDER 1 YEAR PER 1,000 BORN, FROM 1855 TO 1898.

Year.	Population.	Births.	Deaths.	Birth-rate per 1,000.	Death-rate per 1,000.	Deaths under 1 Year.	
						Number.	Rate per 1,000 born.
1855	356,355	13,242	10,655	37·2	29·9	2,600	196
1856	362,606	15,170	10,298	41·8	28·4	2,713	179
1857	369,318	15,706	11,375	42·5	30·8	2,851	182
1858	376,131	15,889	11,472	42·2	30·5	2,846	179
1859	382,756	15,947	10,832	41·6	28·3	2,448	154
1860	389,843	15,943	12,436	40·8	31·9	2,905	182
1861	397,673	16,537	10,936	41·6	27·5	2,544	154
1862	405,789	16,400	11,565	40·4	28·5	2,562	156
1863	413,944	16,986	13,329	41·0	32·2	2,774	163
1864	420,738	17,411	13,674	41·4	32·5	3,051	175
1865	428,123	17,956	13,914	41·9	32·5	3,097	173
1866	437,850	18,288	12,829	41·8	29·3	2,905	159
1867	446,028	18,347	12,578	41·1	28·2	2,895	158
1868	455,000	18,607	13,832	40·9	30·4	3,127	168
1869	464,332	18,495	15,648	39·8	33·7	3,411	184
1870	471,453	19,355	13,955	41·1	29·6	2,991	155
1871	491,900	18,867	15,790	38·4	32·1	3,608	191
1872	494,824	20,158	14,053	40·7	28·4	3,198	159
1873	494,847	19,487	14,499	39·4	29·3	3,255	167
1874	498,270	20,039	15,845	40·2	31·8	3,240	162
1875	499,480	20,825	15,384	41·7	30·8	3,388	163
1876	502,299	20,981	13,763	41·7	27·4	3,166	151
1877	504,487	21,124	13,823	41·9	27·4	3,106	147
1878	507,420	20,622	14,157	40·6	27·9	3,285	159
1879	508,048	19,751	12,498	38·8	24·6	2,504	127
1880	509,732	18,912	13,304	37·1	26·1	2,842	150
1881	512,034	19,106	12,916	37·3	25·2	2,745	144
1882	517,904	19,735	13,046	38·1	25·2	2,959	150
1883	523,154	19,911	14,577	38·1	27·9	3,091	155
1884	528,459	20,557	13,942	38·9	26·4	3,094	151
1885	533,817	19,861	13,492	37·2	25·3	3,100	156
1886	539,231	19,862	13,104	36·8	24·3	2,786	140
1887	544,700	19,328	12,135	35·5	22·3	2,676	138
1888	550,226	19,309	11,681	35·1	21·2	2,560	133
1889	555,808	19,503	13,139	35·1	23·6	3,008	154
1890	561,447	19,279	13,374	34·3	23·8	2,880	149
1891	567,143	19,857	14,324	35·0	25·3	2,946	148
1892	669,059 <sup>1</sup>	22,815	15,218	34·1	22·7	3,168	139
1893	677,883	23,173	15,798	34·2	23·3	3,649	157
1894	686,820	22,644	13,673	34·0	19·9	2,937	130
1895	695,876	22,803	16,344	32·8	23·5	3,538	155
1896	705,052	24,029	14,385	34·1	20·4	3,278	136
1897	714,919	23,880	15,727	33·4	22·0	3,826	160
1898	724,349	24,262	15,333	33·5	21·2	3,792	156

<sup>1</sup> Extended City.

TABLE II.—GLASGOW.—BIRTHS AND DEATHS AT ALL AGES AND AT CERTAIN PERIODS OF LIFE, AND THEIR PROPORTION TO THE POPULATION, ALSO THE ILLEGITIMATE BIRTHS AND THEIR PROPORTION TO THE TOTAL BIRTHS, IN EACH SANITARY DISTRICT FOR 1898.

SANITARY DISTRICTS.	ESTIMATED POPULATION.			BIRTHS.		ILLEGITIMATE BIRTHS.		DEATHS.		DEATHS AT CERTAIN PERIODS OF LIFE.				
	Without Institutions and Shipping.	Institutions and Shipping.	Total Population.	Number.	Rate per 1,000.	Number.	Per cent. Total Births.	Number.	Rate per 1,000.	Under 1 Year.	1-5 Years.	5-20 Years.	20-60 Years.	60 and above.
— Blythswood,...	28,400	106	28,506	540	19.0	64	11.8	443	15.6	78	43	39	162	121
1. Exchange, ...	21,661	1,916	23,577	640	29.5	79	12.3	447	20.6	112	58	32	157	88
2. Port-Dundas, ...	4,459	23	4,482	162	36.3	20	12.3	128	28.7	36	22	11	42	17
3. High Street and Clooses, W., ...	10,136	31	10,167	366	36.1	46	12.6	268	26.4	58	40	22	79	69
4. St. Rollox, ...	16,545	...	16,545	544	32.9	33	6.1	314	19.8	79	48	33	105	49
5. Bellgrove and Dennistoun,...	72,592	1,205	73,797	2,577	35.5	108	4.2	1,368	18.8	354	278	113	404	219
6. High Street and Clooses, E., ...	5,441	1,752	7,193	207	38.0	31	15.0	160	29.4	39	24	10	58	29
7. Greenhead and London Road, ...	59,380	1,248	60,628	2,491	41.9	105	4.2	1,267	21.3	375	258	97	351	186
8. Barrowfield, ...	27,318	...	27,318	1,048	38.4	84	8.0	684	25.0	197	132	57	205	93
9. Monteith Row, ...	4,294	...	4,294	100	23.3	11	11.0	81	18.9	19	11	9	25	17
10. St. Andrew's Square, ...	3,871	548	4,419	133	34.4	15	11.3	93	24.0	20	12	4	36	21
11. Calton, ...	20,965	1,107	22,072	786	37.5	82	10.4	557	26.6	149	100	42	176	90
12. St. Enoch Square, ...	2,822	497	3,319	89	31.5	16	18.0	69	24.4	18	9	8	22	12
13. Brownfield, ...	3,408	307	3,715	148	43.4	17	11.5	104	30.5	22	24	15	34	9
14. Bridgegate and Wynds, ...	4,891	...	4,891	225	46.0	42	18.7	153	31.3	51	27	7	52	16
15. Woodside, ...	68,629	352	68,981	2,310	33.7	115	5.0	1,198	17.5	319	212	95	354	218
16. Cowcaddens, ...	16,627	450	17,077	756	45.5	76	10.1	533	32.1	162	147	31	145	48
17. Kelvinhaugh and Sandyford, ...	31,073	1,053	32,126	750	24.1	32	4.3	419	13.5	87	48	38	127	119
18. Anderston, ...	28,446	217	28,663	1,032	36.3	51	4.9	739	26.0	206	137	53	243	100
19. Kingston, ...	39,797	228	40,025	1,154	29.0	66	5.7	722	18.1	157	122	68	243	132
20. Laurieston, ...	8,725	79	8,804	345	39.5	36	10.4	238	27.3	63	53	17	73	32
21. Hutcheson Square, ...	69,231	...	69,231	2,615	37.8	134	4.7	1,425	20.6	414	322	93	423	173
22. Gorbals, ...	11,317	828	12,145	472	41.7	41	8.7	317	28.0	94	80	28	84	31
— Springburn and Rockvilla,...	32,892	...	32,892	1,276	38.8	51	4.0	646	19.6	198	150	51	178	69
23. Govanhill, ...	20,934	...	20,934	705	33.7	16	2.3	350	16.7	101	61	34	103	51
24. Crosshill, ...	6,768	...	6,768	93	13.7	3	3.2	72	10.6	8	3	10	22	29
25. Langside and Mount Florida, ...	13,317	352	13,669	303	22.8	6	2.0	140	10.5	28	23	9	39	41
26. Pollokshields and Strathbungo, ...	13,581	...	13,581	244	18.0	7	2.9	138	10.2	20	7	10	52	49
27. Pollokshields, W., and Bellahouston, ...	5,620	...	5,620	74	13.2	1	1.4	48	8.5	8	4	3	16	17
28. Hillhead, ...	8,609	...	8,609	104	12.1	10	9.6	78	9.1	10	5	3	21	39
29. Kelvinside, ...	6,180	...	6,180	67	10.8	5	7.5	40	6.5	6	2	1	15	16
30. Maryhill, ...	30,235	590	31,782	1,114	36.8	65	5.8	500	16.5	163	110	36	141	50
31. Possilpark and Barnhill, ...	18,010	1,065	19,075	747	41.5	22	2.9	296	16.4	95	62	15	84	40
— Institutions and Shipping, ...	...	...	...	41	...	7	17.1	837	...	46	57	22	381	331
CITY,	716,174	15,501	731,675	24,258	33.2	1,487	6.1	14,872	20.3	3,792	2,691	1,116	4,652	2,621

TABLE III.—GLASGOW.—DEATHS AT ALL AGES FROM DIFFERENT DISEASES IN EACH SANITARY DISTRICT DURING 1898.

SANITARY DISTRICTS.	All Causes.	FEVER.			Smallpox.	Scarlat Fever.	Measles.	Whooping-cough.	Croup.	Diphtheria.	Diarrheal Diseases.	Consumption.	Acute Diseases of Lungs.	Nervous Diseases of Children.	Atrophy and Debility of Children.	Premature Birth.	Influenza.	Other Causes.
		Typhus.	Enteric.	Undefined.														
— Blythswood, ... ..	443	...	9	...	...	7	9	6	...	4	9	31	77	17	15	15	6	238
1. Exchange, ... ..	447	...	10	...	...	2	16	9	...	1	15	36	77	31	27	15	5	203
2. Fort-Dundas, ... ..	138	...	1	...	...	1	2	4	...	3	3	13	33	9	3	7	1	44
3. High Street and Cloves, W., ...	268	...	3	...	...	1	3	6	...	1	12	22	55	14	15	8	3	125
4. St. Rollox, ... ..	314	...	13	...	...	1	10	9	3	1	13	35	47	25	22	10	4	121
5. Bellgrove and Dennistoun, ...	1,368	...	30	...	...	26	49	77	7	6	60	103	290	82	63	33	9	533
6. High Street and Cloves, E., ...	160	...	2	...	...	2	5	3	1	1	10	24	28	12	4	10	...	58
7. Greenhead and London Road, ...	1,267	1	28	...	...	15	41	72	4	10	85	93	270	95	62	43	4	444
8. Barrowfield, ... ..	684	3	7	...	...	6	20	34	3	11	58	63	161	40	33	13	3	299
9. Monteth Row, ... ..	81	...	1	...	...	1	3	3	2	...	2	5	22	1	6	2	...	35
10. St. Andrew's Square, ... ..	93	...	1	...	...	1	3	3	...	1	2	5	22	1	6	3	...	43
11. Calton, ... ..	557	...	6	...	...	2	20	23	...	6	25	55	113	38	34	19	2	214
12. St. Enoch Square, ... ..	69	...	1	...	...	1	2	...	...	1	2	7	24	6	6	...	...	20
13. Brownfield, ... ..	104	...	6	...	...	...	4	8	...	1	6	8	25	5	4	2	1	34
14. Bridgegate and Wynds, ... ..	153	...	1	...	...	...	4	9	...	...	3	19	44	10	9	4	...	50
15. Woodside, ... ..	1,198	...	15	...	...	...	36	53	5	6	55	86	241	78	65	44	11	479
16. Cowcaddens, ... ..	533	...	5	...	...	2	31	25	2	10	25	34	158	33	39	13	1	155
17. Kelvinhaugh and Sandyford, ...	419	...	11	...	...	9	8	16	1	4	18	33	62	17	12	15	3	210
18. Anderston, ... ..	739	2	11	...	...	12	13	71	1	5	36	67	180	48	28	25	8	232
19. Kingston, ... ..	238	...	7	...	...	14	22	34	3	6	23	75	141	45	32	18	6	296
20. Laureston, ... ..	722	...	22	...	...	1	15	21	...	2	10	16	51	23	11	5	...	81
21. Hutcheson Square, ... ..	1,425	...	2	...	...	16	75	104	6	8	60	119	305	106	76	42	7	478
22. Gorbals, ... ..	317	...	3	1	...	2	25	11	2	1	21	30	69	16	24	9	1	103
— Springburn and Rockville, ...	646	...	12	...	...	7	34	31	4	7	39	60	125	53	42	21	3	208
23. Govanhill, ... ..	350	...	6	...	...	19	20	17	4	3	19	32	53	23	12	10	6	126
24. Crosshill, ... ..	72	...	...	...	...	2	...	5	...	...	2	10	8	3	1	1	3	37
25. Langside and Mount Florida, ...	140	...	...	...	...	1	1	6	...	1	7	11	19	10	7	8	1	68
26. Pollokshields and Strathbungo, ...	138	...	...	...	...	...	1	3	...	1	7	7	16	3	2	1	2	95
27. Pollokshields, W., and Bellahouston,	48	...	...	...	...	2	3	1	...	...	2	5	6	4	1	...	2	56
28. Hillhead, ... ..	78	...	...	...	...	...	...	...	...	...	...	3	3	3	1	2	2	22
29. Kelvinside, ... ..	40	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
30. Maryhill, ... ..	500	...	6	3	...	5	27	17	5	6	19	47	101	37	34	28	...	165
31. Possilpark and Barnhill, ... ..	296	...	3	...	...	3	11	16	...	4	15	...	65	17	18	8	4	107
— Institutions, ... ..	837	...	8	...	...	4	26	8	...	1	15	141	154	5	21	2	7	445
CITY, ... ..	14,872	6	228	4	...	190	539	703	53	113	687	1,325	3,053	917	735	438	104	5,777

TABLE IV.—GLASGOW.—DEATH-RATES PER MILLION FROM DIFFERENT DISEASES IN EACH SANITARY DISTRICT DURING 1898.

SANITARY DISTRICTS.	All Causes.	FEVER.		Scarlet Fever.	Measles.	Whooping-cough.	Croup.	Diphtheria.	Diarrhoeal Diseases.	Consumption.	Acute Diseases of Lungs.	Nervous Diseases of Children.	Atrophy and Debility of Children.	Premature Birth.	Other Causes.
		Typhus.	Enteric.												
— Blythswood, ...	15,599	...	317	246	317	211	...	141	317	1,092	2,711	599	528	528	8,592
1. Exchange, ...	20,636	...	462	92	739	415	...	46	692	1,662	3,555	1,431	1,246	693	9,603
2. Port Dundas, ...	28,706	...	224	224	449	897	...	673	1,570	2,915	7,401	2,018	1,750	10,092	10,092
3. High Street and Cloves, W., ...	26,440	...	296	...	604	592	...	99	1,184	2,170	5,426	1,381	1,480	789	12,628
4. St. Rollox, ...	18,978	...	786	60	296	544	181	60	786	2,116	2,841	1,511	1,330	604	7,555
5. Bellgrove and Dennistoun, ...	18,845	...	413	...	675	1,061	96	83	826	1,419	3,995	1,130	868	455	7,466
6. High Street and Cloves, E., ...	29,406	...	367	367	919	551	184	184	1,838	4,411	5,146	2,206	735	1,838	10,660
7. Greenhead and London Road, ...	21,337	17	472	253	690	1,213	67	168	1,431	1,566	4,547	1,600	1,044	724	7,545
8. Barrowfield, ...	25,038	110	256	219	732	1,245	110	403	2,123	2,305	5,893	1,464	1,208	476	8,493
9. Monteth Row, ...	18,864	...	...	233	699	233	...	...	466	1,630	4,192	1,863	931	466	8,151
10. St. Andrew's Square, ...	24,025	...	258	...	775	775	517	258	517	1,292	5,684	258	1,550	755	11,108
11. Calton, ...	26,568	...	286	...	95	954	...	286	1,193	2,624	5,389	1,813	1,622	906	10,303
12. St. Enoch Square, ...	24,451	...	...	354	709	1,097	...	354	709	2,481	8,505	2,126	2,126	...	7,087
13. Brownfield, ...	30,516	...	1,760	...	1,174	2,348	...	293	1,760	2,347	7,336	1,467	1,174	587	10,270
14. Bridgegate and Wynds, ...	31,282	...	204	...	818	1,841	...	...	613	3,885	8,996	2,045	1,840	818	10,222
15. Woodside, ...	17,456	...	219	...	525	772	73	87	801	1,253	3,512	1,136	947	641	7,140
16. Cowcaddens, ...	32,056	...	301	130	1,864	1,503	120	602	1,503	2,045	9,503	1,985	2,346	782	9,382
17. Kelvinhaugh and Sandyford, ...	13,484	...	354	290	257	515	32	129	579	1,062	1,995	547	386	483	6,855
18. Anderston, ...	25,979	70	387	422	457	2,496	35	176	1,266	2,355	6,328	1,634	984	879	8,437
19. Kingston, ...	18,142	...	176	352	553	854	75	151	578	1,885	5,543	1,131	801	452	7,588
20. Leamington, ...	27,278	...	229	115	1,719	2,407	...	229	1,146	1,834	5,845	2,636	1,261	573	9,284
21. Hutcheson Square, ...	20,583	...	318	231	1,083	1,502	87	115	867	1,719	4,406	1,531	1,098	607	7,005
22. Gorbals, ...	28,011	...	265	177	2,209	972	177	88	1,855	2,651	6,097	1,414	1,212	795	9,190
23. Springburn and Rockvilla, ...	19,640	...	365	213	1,034	943	121	213	1,186	1,834	3,800	1,611	1,277	638	6,415
24. Govanhill, ...	16,719	...	286	908	955	812	191	143	908	1,529	2,532	1,099	573	638	6,305
25. Crosshill, ...	10,638	...	...	295	...	739	...	...	295	1,478	1,182	443	148	148	5,910
26. Langside and Mount Florida, ...	10,513	...	...	75	75	450	...	75	526	826	1,427	751	526	601	5,181
27. Pollokshields and Strathbungo, ...	8,541	...	...	...	74	221	...	74	515	515	1,178	221	147	74	7,142
28. Pollokshields, W., and Bellahouston, ...	9,060	...	...	356	534	178	...	...	356	890	1,067	712	178	...	4,270
29. Hillhead, ...	6,472	...	...	162	...	...	...	116	349	349	696	349	232	232	6,737
30. Kelvinside, ...	16,537	...	199	...	893	562	165	...	323	486	1,456	...	162	333	3,560
31. Maryhill, ...	16,435	...	167	167	611	888	...	198	628	1,555	3,341	1,254	1,125	926	5,457
— Possilpark and Barnhill, ...	...	...	...	...	...	...	...	222	833	1,388	3,609	944	999	444	6,163
— Institutions, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
CITY,	20,326	8	312	260	737	961	72	154	939	1,811	4,173	1,253	1,004	599	8,038

TABLE V.—GLASGOW.—CASES OF INFECTIOUS DISEASES REGISTERED IN EACH SANITARY DISTRICT DURING YEAR 1898.

SANITARY DISTRICTS.				INFECTIOUS DISEASES (NOTIFICATION) ACT 1889.					OTHER INFECTIOUS DISEASES.					Total.
FEBRILE.				Smallpox.	Scarlet Fever.	Diphtheria and Membranous Group.	Erysipelas.	Measles.	Hooping-cough.	Chicken-pox.	Tubercles.			
Typhus.	Enteric.	Continued.	Tuberperal.									Undefined.		
Blythswood, ... ..	26	...	...	...	...	17	43	245	39	3	14	573		
1. Exchange, ... ..	1	55	...	1	...	5	29	314	32	2	9	536		
2. Port Dundas, ... ..	...	7	...	...	...	4	10	60	14	...	7	117		
3. High Street and Clooses, W., ... ..	25	...	...	...	...	1	18	113	31	1	4	233		
4. St. Rollox, ... ..	...	62	...	1	...	9	19	273	23	2	8	450		
5. Bellgrove and Dennistoun, ... ..	119	...	4	4	...	39	83	1,026	196	8	35	1,851		
6. High Street and Clooses, E., ... ..	5	...	...	...	...	4	19	50	6	...	2	112		
7. Greenhead and London Road, ... ..	10	183	1	5	1	37	76	582	232	1	39	1,416		
8. Barrowfield, ... ..	6	61	...	6	...	15	44	229	88	1	18	590		
9. Monteith Row, ... ..	...	4	...	...	...	...	...	42	8	...	3	78		
10. St. Andrew's Square, ... ..	7	...	...	1	...	2	19	58	10	...	...	131		
11. Calton, ... ..	...	46	...	1	...	42	54	251	477	3	15	477		
12. St. Enoch Square, ... ..	8	...	...	1	...	2	5	34	3	...	1	68		
13. Brownfield, ... W. ynds, ... ..	12	...	...	2	...	1	11	24	11	...	4	79		
14. Bridgegate and W. ynds, ... ..	3	...	...	...	...	2	13	53	14	1	2	99		
15. Woodside, ... ..	6	72	...	3	...	45	106	889	138	...	35	1,776		
16. Cowcaddens, ... ..	30	...	...	1	...	21	44	292	86	1	16	546		
17. Kelvinhaugh and Sandyford, ... ..	80	...	...	2	...	19	73	247	36	26	13	705		
18. Anderston, ... ..	5	45	...	3	...	15	34	169	136	3	43	609		
19. Kingston, ... ..	7	48	...	8	...	22	73	459	105	4	28	999		
20. Laurieston, ... ..	20	...	...	1	...	3	14	151	41	2	6	261		
21. Hutcheson Square, ... ..	108	...	...	17	3	39	125	1,233	239	7	43	2,171		
22. Gorbals, ... ..	16	...	...	2	1	12	37	150	21	3	6	285		
— Springburn and Rockvilla, ... ..	61	...	...	4	...	...	38	649	110	...	...	1,022		
23. Govanhill, ... ..	18	...	...	1	...	28	31	671	102	1	24	1,080		
24. Crosshill, ... ..	7	...	...	...	...	4	4	62	17	...	9	135		
25. Langside and Mount Florida, ... ..	4	...	...	...	...	11	11	115	10	2	4	234		
26. Pollokshields and Strathbungo, ... ..	4	...	...	...	...	7	6	29	10	...	4	120		
27. Pollokshields, W., and Bellahouston, ... ..	1	3	...	...	...	6	2	59	1	...	2	94		
28. Hillhead, ... ..	...	4	...	...	...	2	6	39	4	1	5	89		
29. Kelvinside, ... ..	...	6	...	...	...	...	6	55	...	...	5	108		
30. Maryhill, ... ..	...	42	...	4	3	...	32	781	186	34	62	1,356		
31. Possilpark and Barnhill, ... ..	...	21	...	1	...	12	22	334	99	14	9	557		
CITY, ... ..	36	1,212	1	71	9	433	1,113	9,738	2,103	120	501	18,957		







TABLE VII.—GLASGOW.—CERTIFICATION OF DEATHS, 1891 TO 1898.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Total Deaths, ... ..	14,149	14,855	15,436	13,301	15,997	13,994	15,306	14,872
Of these Uncertified, ... ..	577	593	565	477	519	433	453	429
Died without Medical Attendance, ... ..	323	307	269	248	274	217	257	230
Deaths under 5 years, ... ..	5,432	6,276	6,932	5,313	6,437	6,129	6,702	6,483
Of these Uncertified, ... ..	368	360	367	309	304	262	272	244
Died without Medical Attendance, ... ..	202	198	188	176	162	143	174	149
Deaths above 5 years, ... ..	8,717	8,579	8,504	7,988	9,560	7,865	8,604	8,389
Of these Uncertified, ... ..	209	233	198	168	215	171	181	185
Died without Medical Attendance, ... ..	121	109	81	72	112	74	83	81
Percentage of Total Deaths Uncertified, ... ..	4.1	4.0	3.7	3.6	3.2	3.1	3.0	2.9
Percentage of Total Deaths which occurred without Medical Attendance, ... ..	2.3	2.1	1.7	1.9	1.7	1.6	1.7	1.5
Percentage of Deaths under 5 years Uncertified, ... ..	6.8	5.7	5.3	5.8	4.7	4.3	4.6	3.8
Percentage of Deaths under 5 years which occurred without Medical Attendance, ... ..	3.7	3.2	2.7	3.3	2.5	2.3	2.6	2.3
Percentage of Deaths above 5 years Uncertified, ... ..	2.4	2.7	2.3	2.1	2.2	2.2	2.1	2.2
Percentage of Deaths above 5 years which occurred without Medical Attendance, ... ..	1.4	1.3	1.0	0.9	1.2	0.9	1.0	1.0

TABLE VIII.—GLASGOW.—COMPARATIVE CERTIFICATION OF LEGITIMATE AND ILLEGITIMATE CHILDREN.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Legitimate Deaths under 1 year, ... ..	2,581	2,749	3,196	2,568	3,101	2,862	3,358	3,342
Of these Uncertified, ... ..	217	202	207	202	176	155	177	166
Legitimate Deaths, 1—5 years, ... ..	2,287	2,901	3,091	2,243	2,705	2,693	2,697	2,528
Of these Uncertified, ... ..	71	70	67	42	54	38	27	32
Illegitimate Deaths under 1 year, ... ..	378	406	452	356	424	416	448	450
Of these Uncertified, ... ..	58	70	69	49	59	56	55	38
Illegitimate Deaths, 1—5 years, ... ..	186	220	193	146	207	158	199	163
Of these Uncertified, ... ..	22	18	24	16	15	13	13	8
Percentage Legitimate Deaths under 1 year Uncertified, Do. do., 1—5 years, do.,	8.4 3.1	7.3 2.4	6.5 2.2	7.9 1.9	5.7 2.0	5.4 1.4	5.3 1.0	4.9 1.3
Do. Illegitimate Deaths under 1 year do., Do. do., 1—5 years, do.,	15.3 11.8	17.2 8.2	15.3 12.4	13.8 11.0	13.9 7.2	13.5 8.2	12.3 6.5	8.4 4.9

TABLE IX.—GLASGOW.—DEATHS CERTIFIED AND OTHERWISE IN EACH SANITARY DISTRICT DURING SEVEN YEARS, 1891-97.

SANITARY DISTRICTS.	DEATHS CERTIFIED AND OTHERWISE.						DEATHS UNDER 5 YEARS.						LEGITIMATE.						ILLEGITIMATE.					
	Certified.		Not Certified.		No Medical Attendance.		Dispensary.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.	
	Under 5 yrs. & up.	5 yrs. & up.	Under 5 yrs. & up.	5 yrs. & up.	Under 5 yrs. & up.	5 yrs. & up.	Under 5 yrs. & up.	5 yrs. & up.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	
— Blythswood, ... ..	903	2,346	6	15	30	22	13	5	569	524	383	379	466	436	358	354	103	88	25	25	103	88	25	25
1. Exchange, ... ..	1,057	1,716	10	15	26	32	21	4	653	610	461	447	530	501	418	410	123	109	43	37	123	109	43	37
2. Port-Dundas, ... ..	390	444	3	13	12	4	7	2	223	206	189	184	187	173	175	171	36	33	14	13	36	33	14	13
3. High Street and Clooses, W., ... ..	613	1,260	9	13	28	36	15	1	365	337	300	286	291	269	265	254	74	58	35	32	74	58	35	32
4. St. Rollox, ... ..	1,095	1,272	6	27	12	7	13	3	598	570	528	525	539	517	494	493	59	53	34	32	59	53	34	32
5. Bellgrove and Dennistoun, ... ..	4,115	5,190	32	65	104	37	45	5	2,302	2,159	1,994	1,956	2,082	1,970	1,890	1,861	220	189	104	95	220	189	104	95
6. High Street and Clooses, E., ... ..	512	716	11	9	33	36	18	3	321	277	253	235	223	204	210	197	98	73	43	38	98	73	43	38
7. Greenhead and London Road, ... ..	4,055	4,398	27	44	104	33	18	2	2,244	2,119	1,961	1,936	2,027	1,920	1,866	1,848	217	199	95	88	217	199	95	88
8. Barrowfield, ... ..	2,227	2,631	27	37	89	28	18	2	1,222	1,114	1,139	1,113	1,068	978	1,063	1,044	154	136	76	69	154	136	76	69
9. Monteth Row, ... ..	220	409	7	11	16	6	1	3	130	111	114	109	116	99	110	105	14	12	4	4	14	12	4	4
10. St. Andrew's Square, ... ..	271	408	6	4	15	10	3	1	155	135	140	136	134	118	124	120	21	17	16	16	21	17	16	16
11. Calton, ... ..	1,799	2,295	88	79	79	64	27	2	1,023	890	970	909	871	776	869	821	152	114	101	88	152	114	101	88
12. St. Enoch Square, ... ..	210	295	3	12	17	12	4	1	126	107	108	103	100	88	102	97	26	19	6	6	26	19	6	6
13. Brownfield, ... ..	313	373	3	4	30	19	7	...	177	146	176	167	152	128	160	153	25	18	16	14	25	18	16	14
14. Bridgegate and Wynds, ... ..	457	700	16	13	50	57	29	7	315	243	237	214	210	176	181	163	105	67	56	51	105	67	56	51
15. Woodside, ... ..	3,145	4,403	12	31	89	23	58	5	1,814	1,680	1,490	1,465	1,620	1,508	1,417	1,398	194	172	73	67	194	172	73	67
16. Cowcaddens, ... ..	1,671	1,707	6	9	102	41	127	7	1,060	892	846	779	868	751	763	713	192	141	83	66	192	141	83	66
17. Kelvinhaugh and Sandyford, ... ..	978	2,117	8	12	24	9	2	1	567	536	445	442	529	500	430	428	38	36	15	14	38	36	15	14
18. Anderston, ... ..	2,462	2,667	3	7	72	17	28	5	1,289	1,203	1,276	1,259	1,145	1,075	1,201	1,188	144	128	75	71	144	128	75	71
19. Kingston, ... ..	2,176	3,501	11	27	48	19	25	3	1,226	1,169	1,034	1,007	1,096	1,052	977	959	130	117	57	48	130	117	57	48
20. Laurieston, ... ..	737	909	3	1	18	4	9	...	384	356	383	381	340	319	354	352	44	37	29	29	44	37	29	29
21. Hutcheson Square, ... ..	4,645	5,132	60	43	102	23	55	7	2,605	2,434	2,257	2,211	2,377	2,244	2,149	2,115	228	190	108	96	228	190	108	96
22. Gorbals, ... ..	1,165	1,383	15	13	49	17	34	10	661	594	602	571	561	506	548	525	100	88	54	46	100	88	54	46
— Springburn and Rookville, ... ..	2,103	2,106	16	24	49	7	10	...	1,126	1,059	1,052	1,044	1,038	980	1,011	1,005	88	79	41	39	88	79	41	39
23. Govanhill, ... ..	681	997	3	4	4	6	...	...	402	396	286	285	376	371	280	279	26	25	6	6	26	25	6	6
24. Crosshill, ... ..	328	328	1	11	...	2	1	...	40	38	28	28	38	36	28	28	2	2	...	...	2	2	...	...
25. Langside and Mount Florida, ... ..	169	566	3	16	...	...	...	...	115	113	57	56	111	109	55	54	4	4	2	2	4	4	2	2
26. Pitshead, E., and Str'bungo, ... ..	133	564	4	6	...	...	...	...	86	84	51	49	84	82	49	47	2	2	2	2	2	2	2	2
27. Pitshead, W., and Bellah'ston ... ..	39	180	...	5	1	1	...	...	21	20	19	19	21	20	18	18	...	...	1	1	...	...	1	1
28. Hillhead, ... ..	...	...	...	7	...	4	...	...	40	40	19	19	38	38	18	18	2	2	...	...	2	2	...	...
29. Kelvinside, ... ..	63	244	...	1	2	1	...	...	39	37	26	26	37	35	26	26	2	2	...	...	2	2	...	...
30. Maryhill, ... ..	1,045	1,176	7	17	27	6	...	...	619	589	460	456	569	540	441	438	50	49	19	18	50	49	19	18
31. Possilpark and Barnhill, ... ..	929	854	3	5	10	1	1	1	502	490	441	439	468	458	427	426	34	32	14	13	34	32	14	13
— Institutions and Harbour, ... ..	476	4,657	...	41	1	65	...	...	276	275	201	201	103	102	140	140	173	173	61	61	173	173	61	61
CITY, ... ..	40,979	58,442	409	641	1,243	652	590	82	23,295	21,543	19,926	19,436	20,415	19,079	18,617	18,248	2,880	2,464	1,309	1,188	2,880	2,464	1,309	1,188

TABLE X.—GLASGOW.—[DEATHS CERTIFIED AND OTHERWISE IN EACH SANITARY DISTRICT DURING 1898.]

SANITARY DISTRICTS	DEATHS CERTIFIED AND OTHERWISE						DEATHS UNDER 5 YEARS.				LEGITIMATE.				ILLEGITIMATE.			
	Certified.		Not Certified.		No Medical Attendance.		Diagnosed.		Under 1 year.		Under 1 year.		1 and under 5 years.		Under 1 year.		1 and under 5 years.	
	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Under 5 yrs. & up.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.	Number.	Certified.
Blythswood,	115	316	1	4	5	2	...	...	78	72	43	43	69	65	40	9	7	3
1. Exchange,	158	258	2	4	9	5	1	...	112	102	58	56	90	83	46	22	19	12
2. Port Dundas,	56	68	...	2	1	...	...	...	36	35	22	22	31	30	20	5	5	2
3. High Street and Closes, W.,	97	168	1	2	1	...	...	...	58	56	40	40	46	45	36	12	11	4
4. St. Killox,	125	184	...	3	1	...	1	...	77	77	48	48	68	66	47	11	11	1
5. Bellgrove and Dennistoun,	615	726	5	5	10	5	2	...	354	340	278	275	325	314	266	29	26	12
6. High Street and Closes, E.,	60	91	1	4	2	2	...	...	39	36	21	24	34	31	21	5	5	3
7. Greenhead and London Road,	615	627	5	5	11	1	2	1	375	358	258	257	335	320	250	29	29	8
8. Barrowfield,	315	346	1	5	11	4	2	...	197	185	132	130	168	158	124	40	27	8
9. Monteith Row,	28	50	1	1	1	...	...	...	19	17	11	11	18	16	10	1	1	1
10. St. Andrew's Square,	29	59	...	...	2	1	...	...	20	17	12	12	17	15	11	3	2	1
11. Calton,	228	291	12	8	9	9	...	...	149	131	100	97	124	108	92	25	23	8
12. St. Enoch Square,	24	41	...	1	2	...	1	...	18	15	9	9	11	10	8	7	5	1
13. Brownfield,	44	56	...	...	1	1	1	...	22	20	24	24	16	15	23	6	5	1
14. Bridgegate and Wynds,	67	67	...	1	6	6	5	1	51	43	27	24	32	29	21	19	14	6
15. Woodside,	515	656	2	3	11	6	3	2	319	307	212	208	289	280	199	30	27	13
16. Cowcaddens,	284	212	1	...	15	11	9	1	162	144	147	140	139	124	134	23	20	13
17. Kelvinhaugh and Sandyford,	129	284	1	2	11	...	...	...	87	81	48	48	78	73	47	9	8	1
18. Anderson,	331	333	1	...	...	...	...	...	206	196	137	135	190	180	130	16	16	7
19. Kingston,	268	435	3	6	7	2	1	...	157	147	122	121	143	134	117	14	13	5
20. Laurieston,	112	121	...	1	...	...	1	...	63	60	53	52	52	49	50	11	11	3
21. Hutcheson Square,	722	683	5	6	8	...	1	...	414	404	322	318	374	368	305	40	36	17
22. Gorbals,	162	140	4	2	6	1	2	...	94	85	80	77	80	71	76	14	14	4
23. Springburn and Rockvilla,	340	294	3	2	4	2	1	...	198	192	150	148	187	182	145	11	10	5
24. Govanhill,	160	187	1	1	1	...	...	...	101	99	61	61	98	96	59	3	3	2
25. Crosshill,	11	60	...	1	...	...	...	...	8	8	3	3	7	7	3	1	1	...
26. Langside and Mount Florida,	51	88	...	1	...	...	...	...	28	28	23	23	26	26	23	2	2	...
27. P'kshields, E., and Str'bungo,	25	110	2	1	...	...	...	...	20	18	7	7	20	18	7	...	...	...
28. P'kshields, W., and Bellah'ston	11	36	...	...	1	...	...	...	8	7	4	4	7	6	3	1	1	1
29. Hillhead,	15	63	...	...	...	...	...	...	10	10	5	5	8	8	5	2	2	...
30. Kelvinside,	8	32	...	...	...	...	...	...	6	6	2	2	6	6	2	...	...	...
31. Maryhill,	261	215	8	11	4	1	...	...	163	153	110	108	140	131	105	23	22	5
32. Possilpark and Barnhill,	156	134	1	3	...	...	...	...	95	94	62	62	88	87	61	7	7	1
33. Institutions and Harbour,	102	703	...	13	1	18	...	...	46	45	57	57	26	25	42	20	20	15
CITY,	6,239	8,204	60	98	149	81	35	6	3,792	3,588	2,691	2,651	3,342	3,176	2,528	450	412	155

TABLE XI.—GLASGOW.—INSURANCE OF LIVES IN FRIENDLY SOCIETIES, WITH COMPARISON OF INSURANCE OF LEGITIMATE AND ILLEGITIMATE CHILDREN FOR THE YEARS 1891 TO 1898.

	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.
Total Deaths, ... ..	14,149	14,855	15,436	13,301	15,997	13,994	15,306	14,877
Of these Insured, ... ..	8,274	8,390	8,811	7,697	9,433	8,453	9,196	8,866
Deaths under 5 years, ... ..	5,432	6,276	6,932	5,313	6,437	6,129	6,702	6,483
Of these Insured, ... ..	2,818	3,325	3,759	2,752	3,539	3,381	3,723	3,418
Deaths above 5 years, ... ..	8,717	8,579	8,504	7,988	9,560	7,865	8,604	8,389
Of these Insured, ... ..	5,456	5,065	5,052	4,945	5,894	5,072	5,473	5,448
Legitimate Deaths under 1 year, ... ..	2,581	2,749	3,196	2,568	3,101	2,862	3,358	3,342
Of these Insured, ... ..	1,051	1,140	1,415	1,045	1,391	1,259	1,548	1,436
Illegitimate Deaths under 1 year, ... ..	378	406	452	356	424	416	448	450
Of these Insured, ... ..	52	42	44	36	37	37	45	50
Legitimate Deaths, 1—5 years, ... ..	2,287	2,901	3,091	2,243	2,705	2,693	2,697	2,528
Of these Insured, ... ..	1,656	2,066	2,234	1,627	2,023	2,025	2,065	1,880
Illegitimate Deaths, 1—5 years, ... ..	186	220	193	146	207	158	199	163
Of these Insured, ... ..	59	77	66	44	88	60	65	52
Percentage of Total Deaths Insured, ... ..	58·5	56·5	57·1	57·9	59·0	60·4	60·1	59·6
Do. Deaths under 5 years Insured, ... ..	51·9	53·0	54·2	51·8	55·0	55·2	55·6	52·7
Do. Deaths above 5 years do., ... ..	62·6	59·1	59·4	61·9	61·7	64·5	63·6	64·9
Do. Legitimate Deaths under 1 year Insured, ... ..	40·7	41·5	44·3	40·7	44·8	44·9	46·1	43·0
Do. Illegitimate do. do., ... ..	13·8	10·3	9·8	10·1	8·7	8·9	10·0	11·1
Do. Legitimate Deaths, 1—5 years, do., ... ..	72·4	71·2	72·3	72·5	74·8	75·2	76·6	74·4
Do. Illegitimate Deaths, do., do., ... ..	31·7	35·0	34·2	30·1	43·4	38·0	32·7	31·9

TABLE XII.—GLASGOW.—DEATHS IN FRIENDLY SOCIETIES IN EACH SANITARY DISTRICT  
FOR SEVEN YEARS, 1891-97.<sup>1</sup>

SANITARY DISTRICTS.	Under 1 Year.		1 and under 5 Years.		5 Years and over.	All Ages.
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.		
Blythswood, ... ..	141	8	241	5	1,220	1,615
1. Exchange, ... ..	237	8	301	12	1,162	1,720
2. Port-Dundas, ... ..	101	2	146	8	363	620
3. High Street and Closes, W., ...	123	7	192	8	810	1,140
4. St. Rollox, ... ..	282	6	415	13	1,055	1,771
5. Bellgrove and Dennistoun, ...	995	30	1,452	39	3,875	6,391
6. High Street and Closes, E., ...	94	9	141	16	444	704
7. Greenhead and London Road, ...	1,097	32	1,525	38	3,625	6,317
8. Barrowfield, ... ..	560	22	851	28	2,072	3,533
9. Monteith Row, ... ..	45	1	77	2	262	387
10. St. Andrew's Square, ... ..	54	5	77	7	288	431
11. Calton, ... ..	357	33	596	33	1,659	2,678
12. St. Enoch Square, ... ..	31	3	60	2	157	253
13. Brownfield, ... ..	64	2	113	2	236	417
14. Bridgegate and Wynds, ... ..	55	7	106	16	389	573
15. Woodside, ... ..	710	13	1,090	19	2,506	4,338
16. Cowcaddens, ... ..	387	17	552	33	921	1,910
17. Kelvinhaugh and Sandyford, ...	181	1	287	4	1,077	1,550
18. Anderston, ... ..	450	13	870	32	1,857	3,222
19. Kingston, ... ..	404	10	652	17	2,068	3,151
20. Laurieston, ... ..	123	4	246	14	609	996
21. Hutcheson Square, ... ..	1,002	27	1,604	44	3,894	6,571
22. Gorbals, ... ..	213	10	341	20	954	1,538
— Springburn and Rockvilla, ... ..	534	6	825	22	1,743	3,130
23. Govanhill, ... ..	117	4	193	2	648	964
24. Crosshill, ... ..	8	...	12	...	91	111
25. Langside and Mount Florida, ...	10	...	16	...	130	156
26. Pollokshields, E., and Strathbungo,	10	...	12	1	137	160
27. Pollokshields, W., and Bellahouston,	2	...	8	...	27	37
28. Hillhead, ... ..	1	...	1	...	10	12
29. Kelvinside, ... ..	...	...	2	...	4	6
30. Maryhill, ... ..	226	7	321	8	787	1,349
31. Possilpark and Barnhill, ... ..	227	4	336	9	679	1,255
— Institutions and Harbour, ... ..	8	2	35	5	1,198	1,248
CITY, ... ..	8,849	293	13,696	459	36,957	60,254

<sup>1</sup> For the total Deaths under the various heads in this Table see Table IX. (Appendix).



TABLE XIII.—GLASGOW.—DEATHS IN FRIENDLY SOCIETIES IN EACH SANITARY DISTRICT IN 1898.<sup>1</sup>

SANITARY DISTRICTS.	Under 1 Year.		1 and under 5 Years.		5 Years and over.	All Ages.
	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.		
— Blythswood, ... ..	28	...	31	1	171	231
1. Exchange, ... ..	40	3	28	2	187	260
2. Port-Dundas, ... ..	16	...	18	1	55	90
3. High Street and Closes, W., ...	11	3	30	1	119	164
4. St. Rollox, ... ..	36	3	41	...	152	232
5. Bellgrove and Dennistoun, ...	163	4	205	4	553	929
6. High Street and Closes, E., ...	14	1	13	...	66	94
7. Greenhead and London Road, ...	159	6	212	2	526	905
8. Barrowfield, ... ..	83	2	99	2	294	480
9. Monteith Row, ... ..	6	...	7	...	33	46
10. St. Andrew's Square, ... ..	5	...	7	...	43	55
11. Calton, ... ..	49	5	73	5	220	352
12. St. Enoch Square, ... ..	5	...	5	...	20	30
13. Brownfield, ... ..	5	1	16	...	35	57
14. Bridgegate and Wynds, ... ..	12	...	7	2	35	56
15. Woodside, ... ..	120	3	148	6	398	675
16. Cowcaddens, ... ..	63	2	93	5	115	278
17. Kelvinhaugh and Sandyford, ...	25	...	37	...	161	223
18. Anderston, ... ..	86	1	106	3	295	491
19. Kingston, ... ..	61	2	87	3	291	444
20. Laurieston, ... ..	28	3	38	2	97	168
21. Hutcheson Square, ... ..	156	6	233	6	542	943
22. Gorbals, ... ..	30	2	47	2	95	176
— Springburn and Rockvill, ... ..	97	...	113	2	260	472
23. Govanhill, ... ..	29	...	45	2	130	206
24. Crosshill, ... ..	2	...	1	...	18	21
25. Langside and Mount Florida, ...	1	...	5	...	13	19
26. Pollokshields, E., and Strathbungo,	6	...	3	...	33	42
27. Pollokshields, W., and Bellahouston,	1	...	1	...	6	8
28. Hillhead, ... ..	...	...	...	...	1	1
29. Kelvinside, ... ..	1	...	...	...	4	5
30. Maryhill, ... ..	53	1	78	...	136	268
31. Possilpark and Barnhill, ..	39	2	40	...	109	190
— Institutions and Harbour, ... ..	6	...	13	1	235	255
CITY, ... ..	1,436	50	1,880	52	5,448	8,866

<sup>1</sup> For the total Deaths under the various heads in this Table see Table X. (Appendix).

TABLE XIV.—GLASGOW.—MEAN TEMPERATURE AND RAINFALL IN EACH MONTH OF THE YEAR 1898 COMPARED WITH THE AVERAGE OF THE CORRESPONDING MONTHS IN THE PERIOD 1891-97.

MONTHS.	Mean of 1891-97.			1898.		
	Mean Temp.	Rainy Days.	Rainfall. Inches.	Mean Temp.	Rainy Days.	Rainfall. Inches.
January, ... ..	37·8°	18	2·81	44·5°	20	2·58
February, ... ..	39·2°	13	2·74	40·4°	18	3·23
March, ... ..	42·0°	17	2·73	41·2°	18	1·43
April, ... ..	46·3°	12	1·62	48·2°	17	1·83
May, .. ...	51·8°	13	2·45	49·1°	15	2·44
June, ... ..	57·0°	14	3·64	56·5°	15	1·84
July, ... ..	58·4°	15	2·90	58·5°	10	1·43
August, ... ..	58·4°	20	4·61	59·0°	20	4·72
September, ... ..	54·8°	15	3·23	57·6°	15	4·21
October, ... ..	46·4°	16	3·80	51·4°	17	3·51
November, ... ..	43·1°	17	3·34	42·8°	18	5·81
December, ... ..	39·0°	17	4·18	45·2°	25	5·52
YEAR, ... ..	47·8°	187	38·05	49·5°	208	38·55



TABLE XV.—NUMBER, AVERAGE RESIDENCE, AND COST OF TREATMENT OF PATIENTS IN CITY OF GLASGOW FEVER AND SMALLPOX HOSPITALS DURING YEAR ENDING 31ST MAY, 1899.

ORDINARY EXPENDITURE, as per Treasurer's Statement :—\*

Fever Hospital, Belvidere, ... ..	£28,603 16 4	
Smallpox Hospital, Belvidere, ... ..	1,347 13 11	
Fever Hospital, Parliamentary Road, ... ..	9,309 18 11	£39,261 9 2

\* The Ordinary Expenditure on all the Hospitals has been thrown together. There is a certain amount of community in the Expenditure which could not be unravelled without trouble quite out of proportion to any result.

Average daily number of Patients in Fever Hospital, Belvidere, ...	562
Average daily number of Patients in Smallpox Hospital, Belvidere, ...	2
Average daily number of Patients in Fever Hospital, Parliamentary Road, ... ..	269
Average daily number of Patients in Hospitals, ... ..	833

	BELVIDERE		PARLIAMENTARY ROAD	TOTAL.
	FEVER HOSPITAL.	SMALLPOX HOSPITAL.	HOSPITAL.	
Patients remaining at 31st May, 1898, ...	566	5	193	764
Patients admitted during 1898-99, ...	4,194	23	1,739	5,956
Total under Treatment, 1898-99,† ... ..				6,720
Average Residence, ... ..			45·3 days.	
Average Daily Expenditure, ... ..			£107 11 3·75	
Average Daily Cost per Patient, ... ..			0 2 6·99	
Average Cost of Treatment per Patient, ... ..			5 16 11·85	
Average Cost of Bed per Year, ... ..			47 2 7·35	

† In addition to this number, 294 Patients (16 remaining at 31st May, 1898, and 278 admitted during year) were treated in the Joint-Hospital, Knightswood, the Glasgow Share in the Ordinary Expenditure of which was £1,674 0s. 7d.

STATEMENT SHOWING PATIENTS CLASSIFIED AS TO DISEASE, AVERAGE RESIDENCE IN EACH CASE SO FAR AS DISMISSED UP TO 11TH JULY, 1899, AND AVERAGE COST AT THE DAILY RATE GIVEN ABOVE—

DISEASE.	NO. ADMITTED.	AVERAGE RESIDENCE.	AVERAGE COST.
Scarlet Fever, ... ..	3,104	58·7 days.	£7 11 7·11
Enteric Fever, ... ..	1,002	55·4 „	7 3 0·85
Whooping-Cough, ... ..	248	54·9 „	7 1 9·35
Typhus Fever, ... ..	24	35·7 „	4 12 2·34
Measles, ... ..	858	29·6 „	3 16 5·30
Other Infectious Diseases,* ... ..	365	33·8 „	4 7 3·46
Smallpox, ... ..	0	— „	—
All other Diseases,† ... ..	355	29·6 „	3 16 5·30
All Cases, ... ..	5,956		

\* Includes Erysipelas, Diphtheria, Chicken-pox, and Puerperal Fever.

† Includes 67 Nursing Mothers, besides Persons sent in by mistaken diagnosis.

The above calculations of cost do not include Interest on Capital expended in erecting Hospitals.

A. K. CHALMERS.